LESSONS IN ART

WILLIAMS

VOLUME·I

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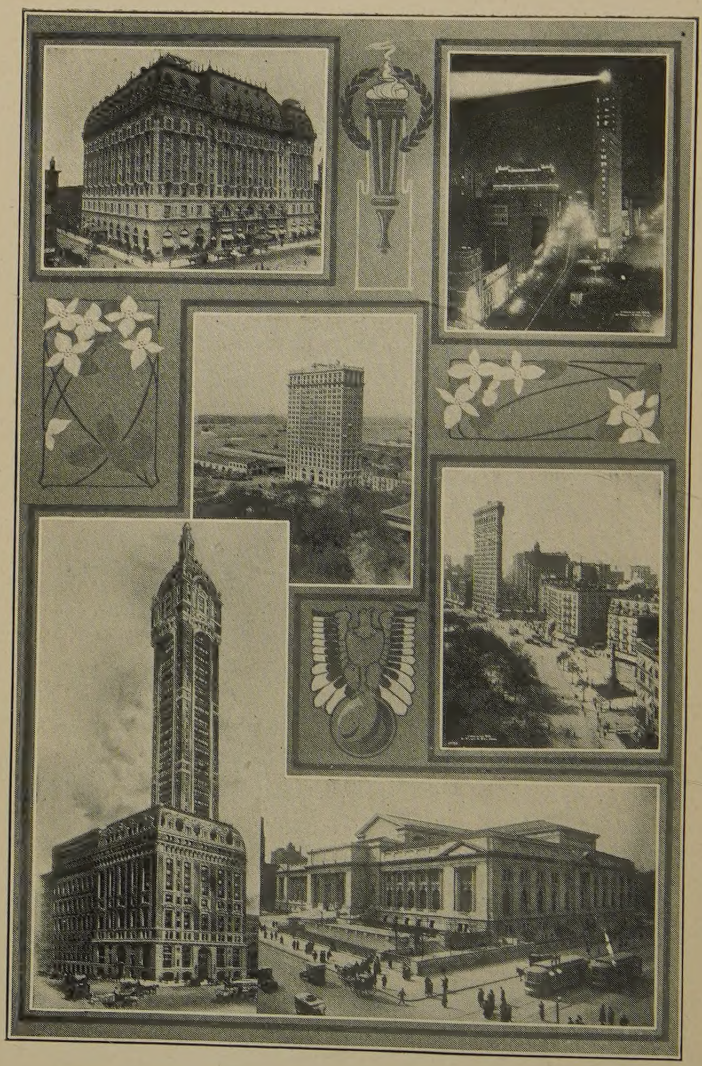

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COLLEGE OF THE HOLY NAMES
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LESSONS IN ART.

A Book for Class-work in Schools, Art Study Clubs, Home Reading Groups, Library Reference and General Reading.

Architecture, **Bronze Work,**
Sculpture, **Painting.**

BY
W. H. WILLIAMS
Principal Thacher School, Kansas City, Mo.

Vol. I.—Architecture.

"Art is the child of Nature; yes,
Her darling child in whom we trace
The features of the mother's face,
Her aspect and her attitude."—*Longfellow.*

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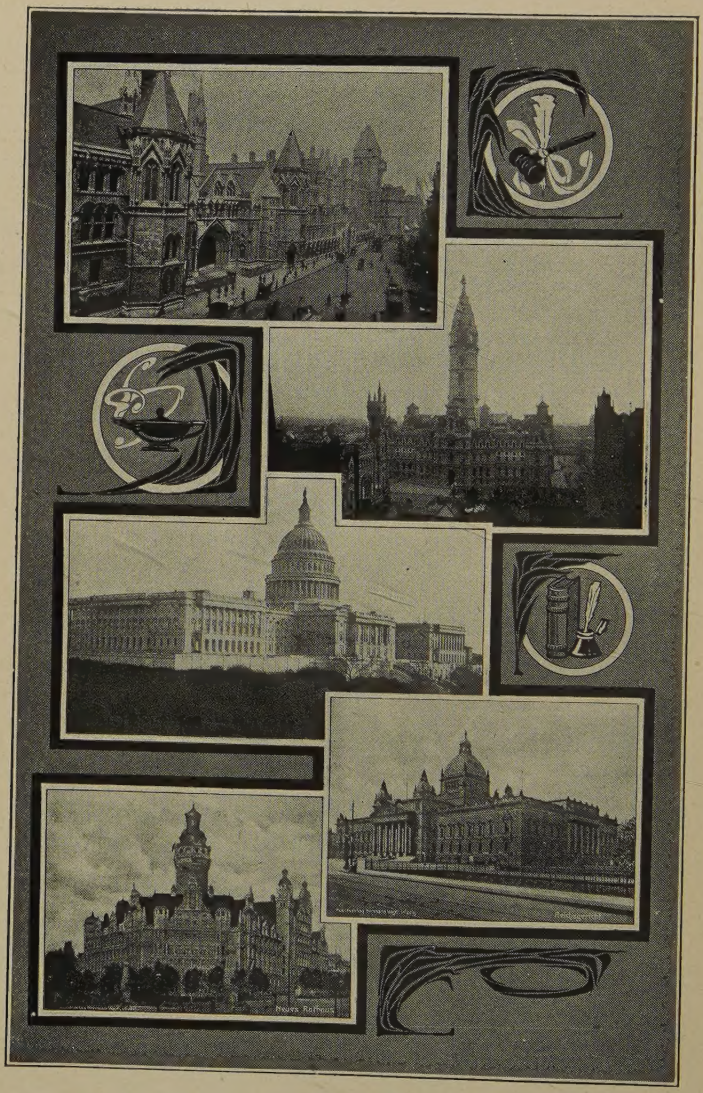
To all that Labor in the General Cause of Education;
Especially to all that Labor in the Field of Art,
This Work is Most Respectfully Dedicated
By the Author.



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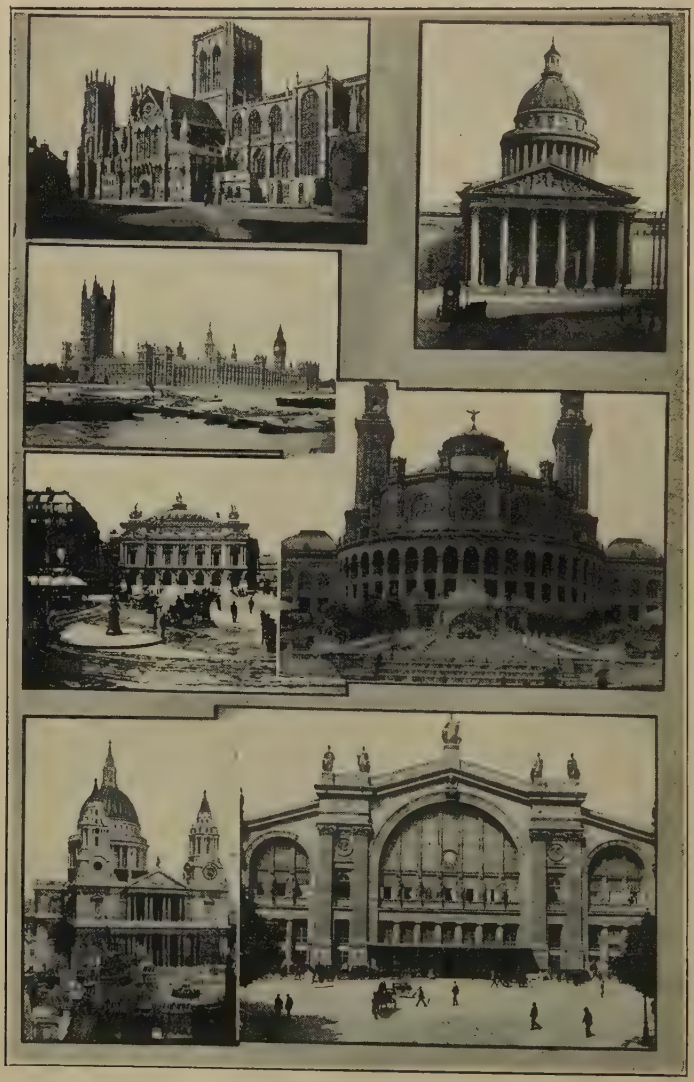
PREFACE.

This book was prepared for the purpose of giving a condensed review of art in two volumes. Primarily, the object is to afford pupils in the preparatory schools an opportunity to acquire some general, as well as technical, knowledge of the great subject, but the work may be used as a guide wherever art-subjects are to be studied.

The scope of "Lessons in Art" embraces the following divisions: Architecture, Sculpture, Bronze Work, and Painting. It gives illustrations and sketches of finest types in each of these divisions.

The following works of art have been carefully examined in the preparation of the book: History of Art in Egypt (Perrot & Chipiez); History of Art (Goodyear); History of Architecture (Hamlin); History of Architecture (Fergusson); Sculpture and Architecture (Raymond); Rambles in Rome (Forbes); Technique of Sculpture (Partridge); Greek Art (Jane Harrison); Ancient Sculpture (Pierre); Schools and Masters of Sculpture (Radcliffe); Art Thoughts (Jarves); Wonders of Sculpture (Viardot); Bronzes (Drury); Early Archæology (Hunter); Bronzes and Other Alloys (Thurston); Bronze and Stone Age (Anderson); History of Greek Art (Perrot & Chipiez); Ancient and Modern Art (Cleghorn); Lubke's History of Art; Rosengarten's Architectural Styles; Viollet-le-Dec's Discourses on Architecture (translated by H. Van Brunt and B. Bucknall); Maspero's History of Egypt; Barber's Mechanical Triumphs of the Egyptians; Myers's Ancient History; Rollin's Ancient History; Rome, by Francis Wey; Great Painters (Forbes) Lectures on Art (Taine); Hartman's History of American Art; Caffin's American Masters of Painting; and Tuckerman's Art in America.

Nearly all the illustrations of the works of European art in the book are from photographs secured by the author while he was abroad. It is his hope that all will enjoy the pictures, outlines, and art lessons; and that they may be helpful aids in developing a deep interest in a most refining and delightful study.



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INTRODUCTION.

ART.

Domain of Art.

Art is a great and comprehensive term. Its domain embraces the whole range of man's activities and industries. The realm of art contains the finest products of man's skill, the best achievements of h is hands, the highest offerings of his intellect. All things, brought to a state of perfection by human labor, have reached that condition because of persistent effort in some one of the divisions of art.

Definition of Art.

Art is a human creation from nature, made from ideals of harmony, grace, utility, beauty, and perfection existing in the mind of the worker. D'Anvers says: "Art is nature re-made." Story says: "Art is nature reflected by a spiritual mirror, bearing the sentiment, feeling, and passion of the spirit that reflects it."

Works of Art.

A work of art is an expression of the worker's thought. It is a copy made from the worker's ideals. It is a result of the inspiration of his genius. The material wrought upon simply receives an impression of the mental picture in the soul of the artist.

Influence of Art.

Art has largely increased the sum of human happiness. The contributions, which have been made to the arts by man all along the ages, have marked his progress from a state of barbarism to that of civilization. Art represents the life, thought, and intellectual power of nations. The art of a people is a true index of their general culture, character, and national spirit.

Mission of Art.

The mission of art is to uplift and develop the human race. Its influence is to refine the taste, ennoble the sentiments, cultivate the finer faculties in man, which contribute to a higher and better life. Michael Angelo said:

> "Art embellishes and sweetens life,
> Lifting it from the level of low cares
> Into the purer atmosphere of beauty."

Power of Art.

Works of art which have been made by a master's hand have great power in them. They appeal to one's ideals of grace, harmony, and beauty; they arouse the finer senses of the beautiful; they create feelings of delight because of the perfection of their execution, and truthful expression of the thought for which they stand as representations.

Life-like Feeling in Works of Art.

Some of the world's greatest masters in sculpture and painting had the power to put such a natural and life-like feeling in their subjects that they appear almost to be real objects. Michael Angelo carved upon his statues a look of intellectual majesty; he chiseled into the silent stone an expression so natural to the person whose image he made in marble that his statues seem almost to be living beings. . . . The statue of Moses has a strong and distinctive personality — the same can be said of his statue of David, as well as of other creations of his chisel. Canova, Thorwaldsen, Bernini, and Fedi had remarkable skill in putting a life-like feeling into their marbles.

A Nation's Art a Test of Intellectual Progress.

It has been well said — "The history of the origin and development, growth and decline of beautiful artistic forms, constitutes a portion of the history of civilization. As regards each particular people, the history of their efforts to conceive and to express absolute perfection, or what is commonly called ideal beauty, in form and in color, is the most reliable test of the stage of intellectual progress which they have attained."

Divisions of Art.

Art is generally divided into two classes:

(*a*) The Fine Arts, such as Architecture, Drawing, Painting, Sculpture, Music, Engraving, and Poetry.

(*b*) The Useful Arts, such as the Operative or Mechanical Arts, Industrial Arts, Agriculture, Transportation, etc.

We may make other classifications of the arts; for example, we may call them as follows:

> The Plastic Arts, The Textile Arts, The Graphic Arts, The Manual Arts, The Decorative Arts, and The Art of Making Books, etc.

Periodical Divisions of Art.

Works of art have been classified and are said to belong to some one of the following periods:

Ancient Oriental Period, The Classic Period, The Byzantine Period, The Mohammedan Period, The Romanesque Period, Gothic Period, Period of the Renaissance, Period of Classic Revival (or Greek Temple Period), and The Modern Period.

Study of Art.

Art is a great and comprehensive study. Its scope is so vast; its classifications so many; the details of its divisions so numerous, and oftentimes so complex; its forms so diversified; its subjects embrace so much of the world's mechanical work on the one hand, and cover such a range of artistic creations in history on the other, its study has so much to do with the civilization and the advancement of nations that the treatment must be limited and condensed in the preparatory schools. The students of technical art schools have an opportunity to see the fuller proportions of the grand subject, and to study its many divisions in detail.

ARCH OF JANUS, ROME. ARCH OF SEPTIMUS, ROME.
GIOTTO'S TOWER, FLORENCE. TREVI FOUNTAIN. LEANING TOWER.
ARC DU CARROUSEL, PARIS.
ALFRED MEMORIAL. FELICE FOUNTAIN. PAULINE FOUNTAIN, ROME.

PART FIRST.

ARCHITECTURE.

The most majestic of "The Sister Arts"
Is that which builds; the eldest of them all
To whom the others are but handmaids
And servitors, being but imitation, not creation.

—LONGFELLOW.

THE BOURSE, PARIS.
THEATRE GARIBALDI, PALERMO.
LONGCHAMP, MARSEILLES.

THE CITY HALL, MUNICH.
NEW CATHEDRAL, BERLIN.
STATE THEATRE ,ZURICH.

THE CONCIERGERIE, PARIS.
THE REICHSTAG, BERLIN.
HAMPTON COURT PALACE, LONDON.

LESSONS IN ART.

I.

OUTLINE OF ARCHITECTURE.

Definition of Architecture.

Architecture, in its limited sense, is the art of designing and building houses, but, in its widest sense, it is the art of planning and erecting all kinds of structures and work from building material. The work constructed may be of many kinds; as, bridges, pyramids, monuments, walls, towers, forts, ships, arches, mausoleums, aqueducts, gateways, pagodas, basilicas, shrines, tombs, fountains, amphitheatres, peristyles, arcades, pillars, pergolas, ocean piers, canal locks, viaducts, docks, etc. Architecture is the art of building.

Prehistoric Architecture.

The piling up of large cairns (or piles of stone) to commemorate some great event; the arrangement of menhirs (or upright stones), whether standing in pairs or in circles, as at Stone Henge; the rude lake dwellings in Switzerland; the *tumuli* or burial mounds — all of those prehistoric remains of work form subjects of study for archæologists and ethnologists. They are not works of architecture. They are merely the primitive beginnings of the builder's art.

Growth of Architecture.

True architecture was developed from primitive man's first attempts at building. The structures built by prehistoric races, or by savages and barbarians cannot be classed as works of architecture as we recognize the term. Primitive man lived in caves, log huts, houses covered with earth, and in tents.

Mortar and Cement.

After ages of slow development man began to make better habitations. He began to use stone in the construction of houses and walls. He began to join the stones by mortar and cement. He began to build of adobe and sun-dried bricks of clay; and finally, after many, many years, to build with still greater care, precision, and strength of other materials.

Temple Building — Essential Elements.

The turning point in primitive man's work of building was at the time of the introduction of cement and mortar. Structures began to assume the proportions and characteristics of works of architecture when the workman began to join the stones with cement. After the primitive architects began to build good stone walls and stronger houses, then they began to erect temples for the worship of their gods, and to combine in such structures the three essential elements: strength, utility, and beauty.

Architecture as a Fine Art.

It is generally believed that the Egyptians were the first people, known to us, with whom architecture attained the character of a fine art. Other ancient people such as the Assyrians, the Phœnicians, and the people of India and Persia made great progress in the building art; but the most enduring monuments of antiquity are those of Egypt.

Styles of Architecture.

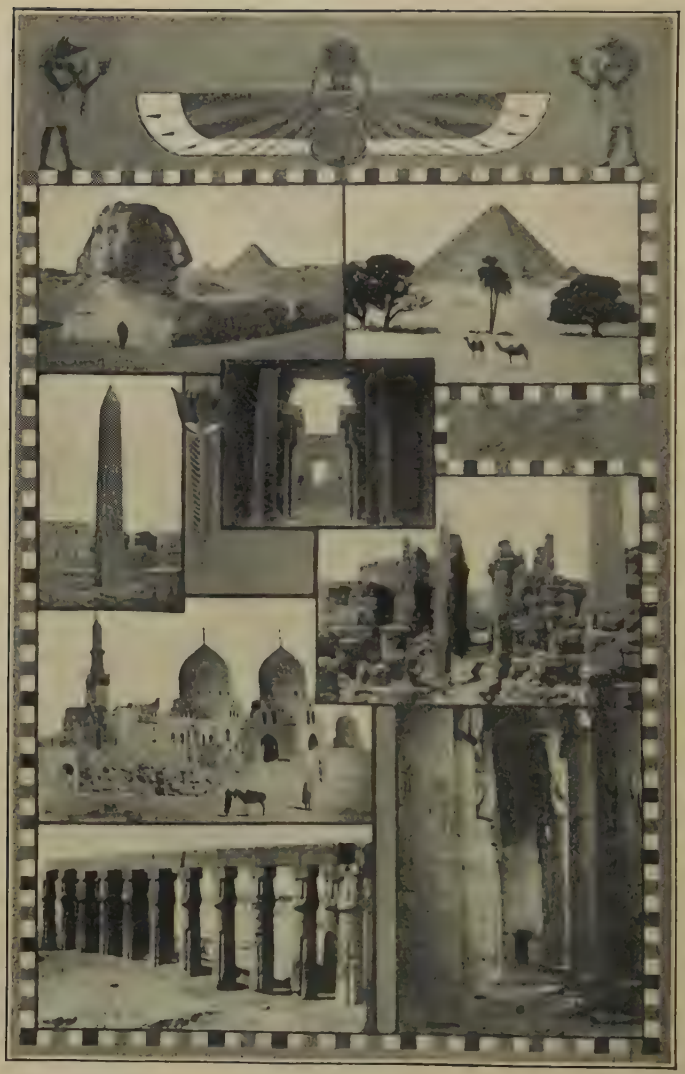
Architecture may be divided into the following styles: 1. Ancient Oriental (including that of India, Persia, Turkey, Arabia, Assyria, and Babylonia. 2. The Egyptian. 3. The Classic (the class name for all works of architecture in which there are Doric, Ionic, Corinthian, Caryatidean, Composite, or Tuscan columns). 4. The Byzantine. 5. The Saracenic. 6. The Gothic. (Early pointed Gothic, Decorated Gothic, Perpendicular Gothic, and Tudor Gothic.) 7. Romanesque. 8. Lombard. 9. Norman. 10. Norman-Romanesque. 11. Style of the Period of Classic Revival — called "Greek Temple Style." 12. The Renaissance Style. (Early Renaissance and High Renaissance.) 13. Modern Style.

Classification of Columns.

Columns are distinguished by the names of the architecture to which they belong; as, the Persian, Hindoo, Egyptian, Grecian, Roman, Byzantine, etc.

Classification of Buildings.

Buildings admit of an extensive classification; such as Government, Territorial, State, County, District, Colonial, and Municipal buildings; Military, Marine, Religious, Educational, and Commercial buildings. Railroad Station Houses, Hospitals, Exposition Buildings, Gymnasiums, Electric Car-line Depots, Museums, Apartment Buildings, Aquariums, Fine Art Galleries, Club Houses, Theatres, Libraries, Association Buildings (such as Y. M. C. A. and Y. W. C. A.), Asylums, Sanitariums, Bath Houses, Buildings for great Public Fairs, Hotel Buildings, Observatories, Towers, Amphitheatres, Convention Buildings, Park Buildings, Castles, Manor Houses, Chateaux, Memorial Buildings, Shrines, Palaces, Mills, Factories, Foundries, Machine Shops, Prisons, Packing Houses, Market Buildings, Secret Society Buildings (such as Masonic Temples, etc.), Flats, Office Buildings; and another kind, forming a vast line of itself, and comprehended in the term, "Domestic Architecture"—relating to that large class of buildings erected for dwelling places and homes.



SPHINX. TEMPLE AT EDFOU. GREAT PYRAMID.
CLEOPATRA'S NEEDLE. TOMBS OF CALIPHS. TEMPLE AT KARNAK.
COLONNADE OF LUXOR TEMPLE. COLUMNS AT DENDERAH.

(Photos copyright by W. H. Rau, Philadelphia.)

II.

EGYPTIAN ARCHITECTURE.

THE PEOPLE OF EGYPT. THE PYRAMIDS.

Egyptian Antiquity.

Egypt is the mother-land of the arts and of architecture and the Egyptians the oldest nation of which we have any certain record. The valley of the Nile was settled about 4000 B. C. by a people who came from Asia and were descendants of Ham. The Hamitic Family was composed of the Egyptians, the Libyans, and the Cushites.

Egyptian Government.

The early settlers of the Nile Valley established a great monarchy. All ancient historians agree that Menes was the first King of Egypt, but they differ widely as to the time when his reign began — some claiming that it was 5004 B. C., and others, all the way down to 3892 B. C. All of our knowledge of the ancient Egyptians shows that in "the dawn of the ages" they were a people of a scientific and mechanical turn of mind, having laws, towns, cities, armies, priests, artisans, authors, tradesmen, farmers, schools, and considerable learning.

Egyptian Skill.

From tomb-pictures and reliefs chiseled on ancient Egyptian temples and monuments, we know that the early settlers along the Nile were skilled in many of the

mechanical arts; understood a good deal about agriculture; had quite a knowledge of manufacture; and were masters of the art of heavy masonry. They certainly were trained in weaving, glazing, pottery, rope making, tool making, carpentry, boat building, leather cutting, brick making, glass making, engraving, casting metals, and many other things. They made chisels, harpoons, sickles, razors, syphons, spears, swords, sandals, shields, hatchets, saws, helmets, panniers, drums, tools, balances, cymbals, etc. The uses of a few of the mechanical powers must have been known to them.

Egyptian Learning.

Egyptian society was divided into five classes: The royal family; the priests; the soldiers; the common people; and the slaves. The priests had great privileges—they held the second rank to kings, and possessed all of the learning in Egypt. They had knowledge of astronomy, geometry, arithmetic, and geography. The Egyptians had a decimal system of numbers; used fixed weights and measures; had a geographical division of their country; and a division of the year into 365 days, adding one day to every fourth year. Rollin says in his Ancient History: "Egypt was ever considered by all the ancients, as the source from whence most of the arts and sciences were derived." In Acts VII., 22, we read that "Moses was learned in all the wisdom of the Egyptians."

Egyptian Dynasties.

According to the history written by Manetho, a priest of Heliopolis, who lived about 250 B. C., the first King of Egypt was Menes — a grandson of Noah, and the reigns of all succeeding kings down to the time of Darius II. (414 B. C.), were divided into thirty dynasties (or family

reigns), during 341 generations, numbering in all 330 kings. Whilst Manetho's chronology of the kings is considered very unreliable by some writers on ancient Egypt, yet, we find his classification stands and is quoted by many Egyptian historians.

Egyptian Pyramids.

It was during the first ten dynasties beginning with the Fourth Dynasty, 3733 B. C., that those world-famous and stupendous works of architecture, the pyramids, were built. They are the oldest architectural monuments on the globe and are justly ranked among "The Seven Wonders of the World." There is a silent, yet majestic, grandeur and sublimity in those vast and wonderful ranges of stone, that rise aloft from the edge of the desert. They stand as mighty landmarks of history — as great memorials of an age which reaches far back into the abyss of time.

Location and Number of Pyramids.

According to Hamlin, in "History of Architecture," there were originally nearly one hundred pyramids, large and small ones, scattered in six groups along the Nile valley from Abou-Rouash to Meydoum — about forty-three miles, but now the principal ones are given as numbering sixty-seven. All of the pyramids were built of stone, except some half dozen which were constructed of sun-dried brick. Many small pyramids have crumbled into heaps and are half covered with desert sand.

Forms and Uses of Pyramids.

The pyramids differ in the form of construction. Some of them are "step built," some "plane sloped,"

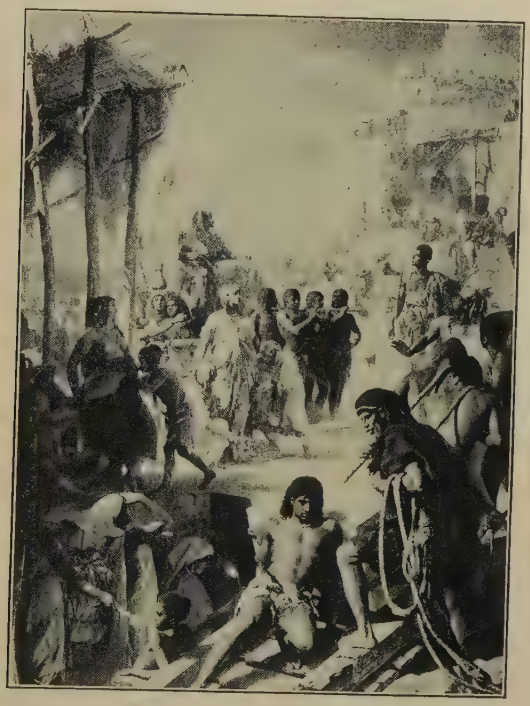
and others "broken-sloped." They are all royal tombs, built to honor Egyptian Pharaohs, or rulers, and they contain sepulchral chambers for the royal dead. The first thing an Egyptian Pharaoh did, when he began his reign, was to plan the work of building a pyramid in which to have his embalmed body securely placed after his death. Maspero, in "History of Egypt," says: "From the beginning of the Fourth to the end of the Fourteenth Dynasty . . . the construction of pyramids was a common state affair, provided for by the administration, secured by special services. Not only did the Pharaohs build pyramids for themselves, but the princes and the princesses, belonging to the family of the Pharaohs, constructed theirs — each according to his resources."

PYRAMID OF CHEOPS.

The three greatest of those mighty works of early Egyptian architecture are to be found at Gizeh — seven miles from old Cairo — on the edge of the Great Sahara Desert. They were built during the Fourth Dynasty. The first, or "Great Pyramid," was built by King Cheops, 3733 B. C., the second, by his brother, King Cephren, and the third, by his son, King Mycerinus. The Pyramid of Cheops when completed was 764 feet square at the base and 482 feet high; that of Cephren, 717 feet square at the base and 454 feet high; and that of Mycerinus 253 feet square at the base and 218 feet high. These wonderful structures were built of lime-stone, and in their perfect state were covered with faced layers of polished granite.

Maspero says: "The Great Pyramid up to the time of the Arab Conquest possessed its polished facing stones,

colored by age, yet, so well jointed that one would have said that it was a solid slab from top to bottom." Almost all of the best casing stones were taken off long, long ago



BUILDING THE PYRAMIDS.

Painting by Richter.

(Photo by Berlin Art Company, New York. Permission.)

and built into palaces at Cairo. If some of those inscriptions could be obtained and translated they might throw a good deal of light on many obscure things in Egyptian history.

Construction of the "Great Pyramid."

The "Great Pyramid" covers about thirteen and a half acres of ground. It is composed of two hundred and eight courses of limestone rock, well dressed — perfectly squared — and varying in thickness from 2½ feet to 5 feet and weighing from two to sixty tons. Many of the stones are 30 feet long.

The main pyramid was built in steps and the casing stones were put on afterwards. The work of casing the pyramid began at the top, and the great flat stones were hoisted and put in their places by machines unknown to the architects of this day. Most of the huge blocks in the vast pile were quarried in the Mokattam Hills at Masara and Tura, about twelve miles distant across the Nile. Barber, in "Mechanical Triumphs of the Egyptians," says: "The two quarries in ancient times must have had a perpendicular face; this being cut away, tunnels were run into the hills and the rock worked out from there. The remains of an inclined plane can still be seen leading to the river, less than a mile away, and deep scores and ridges in the rock roadway show where the runners of sledges might have passed."

Transportation of the Stone.

After many Egyptian slaves and oxen had drawn the big stones on sledges, over the stone causeway to the river, then they pulled the loaded sledges on to large rafts made of locust logs and transported them to the point where the loads were drawn ashore.

Inclined Plane to the Pyramid.

Between the base of the pyramid and the river there was another inclined causeway. Herodotus, the oldest historian of the world, visited Egypt, 450 B. C. He says:

"The Causeway is about five Stades (three thousand feet long, ten orgyæ (sixty feet) wide, and its height, where it is highest is eight orgyæ (forty-eight feet). It is of polished stone with figures carved on it." The inclined plane must have been built up as the pyramid rose course by course. In all probability, the incline was built of mud bricks and chippings from the pyramid floor as the courses were laid one upon another. The plane must have been carried up at least two hundred feet because the heaviest stones are found in the ceiling of the "King's Chamber." Hundreds of slaves and captives drew the enormous blocks up the incline on sledges and then took the heavy loads to their places on wooden rollers.

Casing the Pyramid.

After the main pyramid was completed by steps, then the casing stones were put on. The casing slabs were carried up from step to step by hoisting machines * Herodotus (Carey's translation) says: "The pyramid was built in the form of steps. When they had first built it in this manner, they raised the remaining stones (the casing stones) by machines made of short pieces of wood; having lifted them from the ground to the first range of steps, when the stone arrived there, it was put on another machine that stood ready on the first range; and from this was drawn to the second range on another machine, for the machines were equal in number to the ranges of steps. The highest parts were finished first, then the parts next following, and, last of all, the parts near the ground." The inscriptions (and we are told there were many) must have been cut on the faces of the large slabs

*A model of one of those "hoisting machines" is to be seen in the Museum at Boolak. It is a simple contrivance. It is somewhat like an old-fashioned cradle.

before they were carried up on the hoisting machines. Col. Howard Vyse says: "In blocks of each course are holes eight inches in diameter and four inches deep, apparently made to support the hoisting machines described by Herodotus."

Interior of the "Great Pyramid."

The internal arrangement of the pyramid shows that the architects certainly did their work according to scientific principles. Fergusson, in "History of Architecture," says: "Nothing can be more wonderful than the extraordinary amount of knowledge displayed in the alignment of sloping galleries, the provision for ventilating shafts, and in all the interior contrivances of the whole structure." There are four chambers inside of the pyramids, *viz.:* "King's Chamber," 34 feet by 19 feet by 17 feet; "Queen's Chamber," 18 feet square by 20 feet; "Unfinished Chamber" and "Chamber of Barriers." There are four ventilating shafts, leading from the royal chambers to the outside, and one entrance way. This opening is forty-five feet from the ground and is $3\frac{1}{2}$ feet by 4 feet. It has a granite flagstone which works on a hinge of stone like a trap-door. Upon tilting this slab on its hinge the visitor can crawl on his hands and knees for 318 feet to the "Unfinished Chamber," ninety feet under the ground-line of the pyramid. Passage ways slope upward from this entrance to the other chambers; in one place for 148 feet, the passage is 28 feet high and made of the finest polished stone. The acoustic properties of this arrangement of interior tunnel-ways is remarkable. At one place, as many as ten echoes can be heard when a loud noise is made.

The "King's Chamber," which is seventy-one feet above the "Queen's Chamber," contains nothing but a

large granite sarcophagus, without a cover and without a mummy. Years ago, European archæologists took away the mummies of the Pharaoh and that of his queen. There is not a word of inscription, a figure, or hieroglyphic to show that this gigantic work, the greatest of all the pyramids, was built as a place of sepulchre for King Cheops and his queen.

According to Herodotus, it took the fabulous number of one hundred thousand men thirty years to quarry the rock, construct the causeways, and erect the vast structure, which is rightly considered one of the architectural marvels of the ages.

TEMPLES, TOMBS, AND OBELISKS

Egyptian Temples.

No other nation has ever surpassed the ancient Egyptians in the extent and magnitude of their architectural monuments and temples. The period of Egyptian temple-building ranged from 2000 B. C., when Thebes was the capital, down through 1970 years, or the time when Egypt was annexed to the Roman Empire (30 B. C.). There were a great many palaces and temples, some of the vast ruins of which may be seen to-day. Thebes, "the old city of an hundred gates," contains the ruins of the most stupendous buildings ever erected.

Classification of Egyptian Temples.

Wilkinson, in "Architecture of Ancient Egypt," classifies those great religious buildings as follows: 1. "Sanctuary Temples" — one chamber. 2. "Peripteral Temples" — surrounded with columns. 3. "Temples in Antis" — having a portico and two or four columns in front. 4. "Many columned temples" — as at Dendera and Esne. 5. Temples with courts and pyramidal towers, or propylons, in front.

Classification of Columns.

The columns used in the construction of the Egyptian temples were classified as follows: 1. Square Columns. 2. Polygon-sided Columns, plain or fluted. 3. Columns with Lotus Bud Capitals. 4. Columns with "Inverted Bell Capitals." 5. Columns with "Palm-Tree Capitals." 6. Columns with "Isis-headed Capitals." 7. Composite Columns with bells, palms, and Isis-heads. 8. Columns with Osiris-headed Capitals. The temple columns were richly decorated with color ornaments, bands of carved pictures, and hieroglyphics. The capitals of the columns were also covered with carved and painted figures and designs.

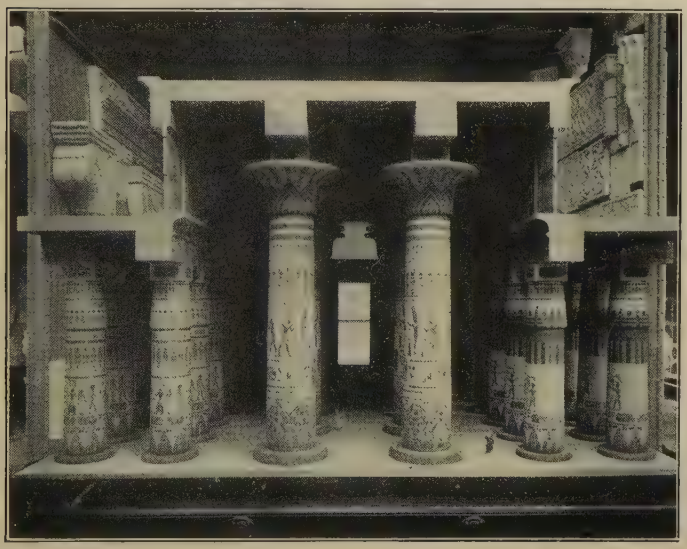
Structural Details of Temples.

The earliest temples had only one chamber, in which there was an altar, a statue of the deity, and an opening through which worshippers might look. None but priests were allowed inside this style of sanctuary. In time, temple-plans were changed, as the buildings began to have vaster proportions. There were then added high surrounding walls, tall gateways, or propylons, huge pyramidal towers, large courtyards, or temenos, porticos, or pronaos, long corridors, rows upon rows of columns, chambers for priests, always the adytum, or sanctuary, for the idol statue and its altar, and the approach to the temple through a long avenue of sphinxes. At the beginning of this avenue there was a pergola, or peristyle of columns, in which processions of worshippers assembled.

Noted Egyptian Temples.

The most imposing temples of Egypt were as follows: Amen-Ra at Karnak, Khonsu at Karnak, Temple of

Luxor, The Ramesseum, The Amenopheum, Temple of Edfou, two temples at Philæ, Temple of Esneh, temples at Kalabsheh, Kardassy, and Dandour in Nubia, two grotto temples at Ipsamboul, temples at Gournah and Abydos, the Sphinx temple, and the temple at Meydoum.



CENTRAL PART OF HYPOSTYLE HALL. TEMPLE OF AMEN-RA.

(From model in Metropolitan Museum, New York.)

Temple of Amen-Ra at Karnak.

The Temple of Amen-Ra at Karnak was the grandest effort of the Egyptian architects. Its extreme length was 1215 feet and its greatest width 376 feet. This vast structure was begun by Pharaoh Osourtesen (XIIth Dynasty), 2000 B. C., and was not completed until the

time of the Ptolemies. Successive monarchs added new halls, chambers, courts, vestibules, corridors, obelisks, pylons, avenues, sphinxes, and external gates. The great Hypostyle Hall in this temple was 340 feet by 170 feet. It has been called "the noblest single work of Egyptian architecture." It contained 134 columns in sixteen rows, upholding a vast roof of stone. The central columns were 70 feet high, nearly 12 feet in diameter, and the capitals 65 feet in circumference. There was an avenue of approach to this wonderful structure which was over two miles long, sixty-three feet wide, and bordered with marble statues of colossal sphinxes. When we think of the vast proportions of this magnificent work — its great extent, countless chambers, halls, and courts; its mighty phalanx of columns, all carved and filled with painted decorations, pictures and hieroglyphics; its huge towers, pylons, and the long avenue of obelisks and sphinx statues, it certainly must be considered the grandest creation of temple architecture the world has ever known.

Egyptian Tombs.

The ancient Egyptian architects built a vast number of tombs commonly called "Mastabas." These were rectangular structures made of fine stone or brick. They always faced the East and the interior was divided into three parts: the chapel; the secret inner chamber, containing a marble statue of the deceased; and a wall, leading to the "Mummy Chamber," containing the sarcophagus.

Kinds of Tombs.

There were two general kinds of tombs: Pyramidal tombs and Cliff-side tombs. Pyramidal tombs were

built of well squared stone above ground; Cliff-side tombs were vaults cut into the perpendicular sides of cliffs, often having long passages tunnelled underground to a great length. Egyptian tomb-architects decorated the tomb-chambers with color schemes, symbols, hieroglyphics and painted scenes of festivity or worship. Some of the most noted Egyptian tombs were as follows: Campbell's Tomb at Ghizeh; the Cliff-side tombs at Beni-Hassan; tombs at Abydos, Thebes, and Sakkara.

Egyptian Obelisks.

Obelisks are huge shafts, most generally of red granite, or syenite, covered with carvings, chiseled figures, and picture writing. The use of them must have begun in the setting up of memorial stones to signalize important events. Obelisks were usually placed in pairs at the gateway of temples. A great many of the most noted monoliths have been taken away from Egypt. Forbes in "Rambles in Rome" gives the number of obelisks in Rome as fourteen. There is a large one in Central Park, New York, presented to the United States by the Khedive of Egypt.

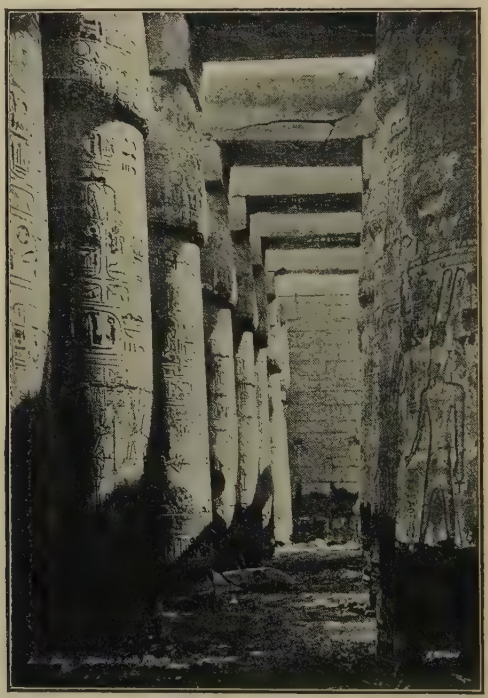
The "Rosetta Stone."

In 1799, Napoleon Bonaparte was erecting some fortifications at the Rosetta mouth of the Nile. His engineers dug up a stone slab of remarkable appearance. Napoleon knew that it was a monumental stone of some kind and sent it to the University of Paris. After much careful study the French professors decided that the slab contained three alphabets, which could be used in the translation of inscriptions on Egyptian temples, pyramids, tombs, and obelisks. It was a valuable discovery. It is an alphabetical key. By its use a flood of light has been

thrown upon Egyptian history. The famous stone is now in the British Museum, London.

Forms of Egyptian Writing.

The Egyptians used three forms of writing: the Hieroglyphic, which consisted of rude pictures, usually found on monuments, obelisks, etc.; the Hieratic, which was a simpler form of the Hieroglyphical writing and principally used on papyrus manuscripts; and the Demotic, a still simpler form than the Hieratic.



RUINS — TEMPLE OF KARNAK, EGYPT.
(Photo by Soule Art Co.)

III.

CHALDEAN ARCHITECTURE.

Middle Asian Kingdoms.

Three very ancient kingdoms, namely, the Chaldean, the Assyrian, and the Persian, were situated within the basin of the Tigris and Euphrates Rivers and bordering on the Persian Gulf. Some writers claim that a civilization existed there even more ancient than that of Egypt. Rawlinson says: "Chaldea stands forth as the parent of Asiatic civilization."

Political History.

In the earliest times Chaldea was divided into two divisions, one called Shumir (Shinar); the other, Accad. We have very little certain knowledge of the Shumidians and the Accadians until the coming in of the Shemites (Semites). With their period of immigration the political history of Chaldea began. Sargon I. was the first Chaldean king and he began reigning about 3800 B. C. Sargon is called by some, "The Chaldean Moses"; by others, "The Chaldean Solomon." Some writers claim that the true Chaldean kingdom was founded by Nimrod about 2234 B. C. Nimrod was the son of Chus, grandson of Ham, and great-grandson of Noah. He founded four cities: Babel (Babylon), Erech, Calneh, and Accad. The government of Chaldea was an absolute monarchy, and it existed until the Persian Conquest made by Cyrus 538 B. C.

Chaldean Learning.

The early Chaldeans made considerable progress in learning and the arts. Their priest-astronomers divided the Zodiac into twelve signs, such as we use now; made maps of the heavens; named many constellations; foretold eclipses; constructed sun-dials; measured time by water-clocks; divided the year into twelve months; fixed the measure of seven days to a week; invented the duodecimal system of numbers; and established weights and measures, still in use all over the world. They had a form of alphabetical writing and made vast numbers of books (clay tablets) with written characters on both sides. Urukh had such a great library of tablets that it was called "The City of Books." In the ruins of Babylon one library was found containing thirty thousand tablets, dating back to 2700 B. C. The tablets were in perfect order.

Industrial Art of Chaldeans.

Some historians say that the Chaldeans knew the uses of several of the mechanical powers. They certainly had skill in weaving, dyeing colors, enameling, engraving, inlaid work, cutting gems, basketry and pottery. They understood masonry and made aqueducts and arches in vaulted drains.

Chaldean Commerce.

The Chaldeans were a commercial, as well as a mechanical people. "Babylon the Great" was a commercial trade-center between Eastern and Western Asia and parts of Africa and Europe. There was a large caravan trade reaching in all directions from the city, bringing a vast amount of such things as gold, cotton, pearls, valuable woods, metals, fine wool, ornaments, carpets, curtains, myrrh, cinnamon, spices, ivory, gems, etc.

Architectural History.

Fergusson, in "History of Architecture," says: "The architectural history of the Middle Asiatic countries is divided into three epochs: 1. The Chaldean Period, from 2234 B. C. to 1520, comprising the architectural ruins at Wurka, Mugheyer, Niffer, Kaleh, Shahrein, and Sherghat. 2. The Assyrian kingdom, founded 1290 B. C., extending down to 538 B. C., comprising the buildings of Nimroud, Koyunjik, Khorsabad, and *second* Babylon. 3. The Persian kingdom, commencing 538 B. C., ending 333 B. C. and comprising the architectural ruins at Susa, Persepolis, and Pasargadæ."

Chaldean Tower-Temples.

A most famous line of architectural work in Chaldea was the building of lofty tower-temples. The chief building material used in their construction was sun-dried brick with trimmings of fine stones. Tower-temples were built in steps like the Egyptian pyramids. The great structures were used both for the worship of the gods and for observation and study of the stars, as the stars were connected with Chaldean religion. The grandest architectural type of the tower-temple form in Chaldea was that of the Temple of Belus, or "Birs Nimrod," erected about 2334 B. C. near Babylon. It rose from a plaza 1200 feet square. In the middle of it was the temple of Baal with a golden statue. Enclosing all was a vast circular tower 600 feet in diameter, rising in eight terrraced stories to a height (Strabo says) of 600 feet. On the topmost story was a grand temple, where there was the sacred ark, a table of gold, and a golden couch for the god. It had many chapels, panels trimmed with gold, gold vessels, cups, censors, gold tables, gold statues (one 40 feet high). Diodorus estimated the whole cost of the

tower and the riches contained in it to be "7350 Attic talents of gold" or £21,000,000 Sterling ($105,000,000.00).

This fabulous sum is too vast to be believed, yet, the statement is made.

Babylon — Walls and Squares.

Babylon, the mighty capital and metropolis of Chaldea, was on the Euphrates. Rollin, in "Ancient History," says: "The City of Babylon had walls which were every way prodigious. They were in thickness 87 feet; in height 350 feet; in compass 480 furlongs (60 miles — 15 miles on each side). There were one hundred outside gates (twenty-five on each side) all of solid brass. Between every two of the gates there were three towers and four towers at each corner. There were 676 squares in the city, each of which was two and a quarter miles in circumference. The streets crossed at right angles and were fifteen miles long."

Quays and Bridges.

The same historian says: "A branch of the Euphrates ran across the city from North to South; on each side of the river was a quay and a high wall (87 feet thick) built of brick and bitumen. In these walls (on the quay) there were inside gates of brass at every street crossing the river. There was a bridge not inferior to any other structure. It was 720 feet in length, 30 feet in width, built with wonderful art. The arches were made of huge stones fastened together with chains of iron and melted lead."

Magnificent Palaces.

"At each end of the bridge there was a royal palace, connected by a tunnel (built when the river was dry).

The old palace was on the east side of the river and was three and three quarters miles in circumference. The new palace stood on the west side of the river and was sixty furlongs (seven and one half miles) in circumference of walls. It was surrounded by three lofty walls, one within another, with considerable space between them. These walls were embellished with an infinite variety of sculptures."

Hanging Gardens.

In full view of the last palace were the famous "hanging gardens." They were ranked among "The Seven Wonders of the World." They contained a square of four hundred feet on every side, and were carried up in the manner of several large terraces, one above another, until the height equalled the height of the city's wall. The ascent from terrace to terrace was by steps ten feet wide. The whole pile was sustained by vast arches, raised upon other arches, one above another, and strengthened by a wall twenty-two feet in thickness. On top of these arches were first laid flat stones 16 feet by 4 feet. The whole was covered with thick layers of sheet lead upon which lay the mould of the garden. All of this floorage was contrived to keep the moisture of the mould from running away through the arches. In the upper terrace there was a pump by which water was drawn up from the river to water the garden. In the spaces between some arches there were apartments from which a beautiful prospect was seen. All of this wonderful work was built by Nebuchadnezzar to please Queen Amytis, who was from the mountain region of Media."

IV.

ASSYRIAN ARCHITECTURE.

Political History — Assyria.

Some writers claim that the Assyrian kingdom was founded by Shalmaneser I., 1290 B. C., and that Shemites migrated from Chaldea to Assyria. Its geographical situation is the district between the upper waters of the Tigris River and the Zagros Mountains. The government was an absolute monarchy and existed until the destruction of Nineveh about 625 B. C., by the Medes under Cyaxares and the Babylonians under Nabopolassar. It is thought that the name Assyria was derived from Asshur, son of Shem.

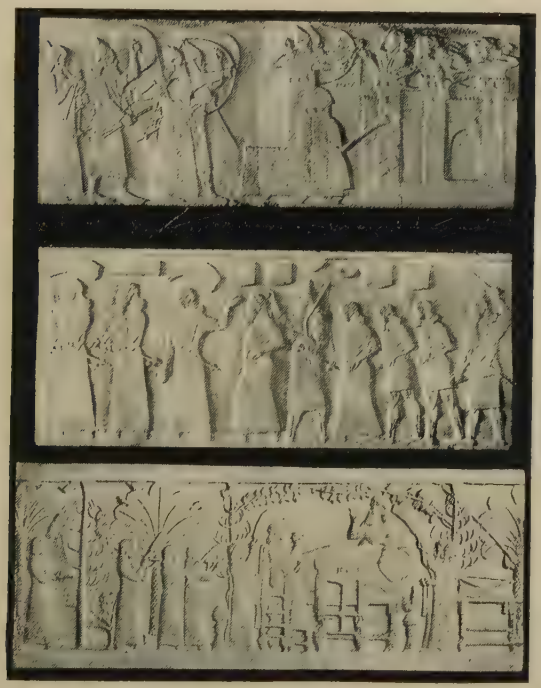
Asshur-bani-pal.

This monarch has been called "The Augustus of Assyria." He encouraged the making of books (clay tablets). In the ruins of the King's Palace at Nineveh, Layard discovered that fine collection of tablets called the "Royal Library." The number of tablets in the collection was over ten thousand.

Assyrian Palaces.

The greatest architectural monuments left by the Assyrians were the palaces of their kings. The most noted palaces which have been exhumed by Assyrian explorers and scientists are those of Kings Sennacherib,

Sardanapalus, Esarhaddon, Sargon, Shalmaneser, and Tiglath Peleser. The palace of Sennacherib surmounted a great platform of masonry at Nineveh and covered an area of over ten acres of ground.



SCULPTURES FROM THE RUINS OF THE ROYAL PALACE OF ASSHUR-BANI-PAL AT NINEVEH.

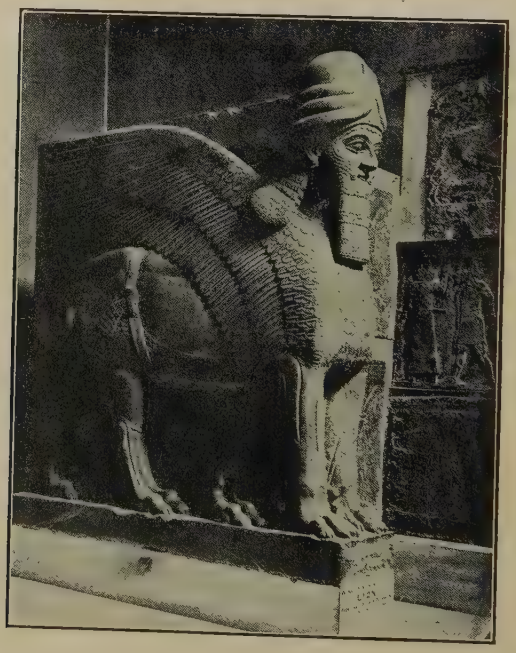
Subjects—1. "Attack upon a city." 2. "Banquet at King's Palace."

(Photo from models in Metropolitan Museum of Art, in New York).

Assyrian palaces were built upon a succession of terraces of "made ground." Their walls were very thick and were built of large brick. The great halls were

faced with alabaster slabs. It is asserted that there were in Koyunjik, two miles of sculptured panels alone in palaces.

Fergusson says: "When all the palaces with their towers and temples were seen gay with colors and crowded with all the state and splendor of an eastern monarch, they must have formed a scene of dazzling magnificence and splendor."



WINGED AND MAN-HEADED LION, ASSYRIAN DEPARTMENT, BRITISH MUSEUM.
(Photo by Soule Art Co.)

V.

PERSIAN ARCHITECTURE.

Political History — Persia.

Ancient Persia embraced the mountainous district between the desert of Iran and the northeastern shore of the Persian Gulf. It had fertile plains and valleys. "The great Oriental empire of the Medes and Persians, called 'The Persian Empire,' absorbed all of Western and Southwestern Asia (except Arabia), as well as Egypt and a small part of Europe." The first prominent ruler was King Cyaxares, 625 B. C.; the last, Darius III., 331 B. C. After the battle of Arbela, October, 331 B. C., the Persian Empire came to an end, and Alexander the Great became the master of the whole eastern world.

Architectural History.

The architectural history of Persia is embraced between the periods 538 B. C. and 333 B. C. The most famous works of Persian architecture were royal palaces and tombs. The most celebrated palace ruins are those in the city of Persepolis. A writer says: "Here on a great terraced platform of heavy masonry — 1500 feet by 1000 feet and 40 feet high — stood those splendid palaces with noble portals and sweeping staircases, elegant fretwork for decoration, rows of massive pillars and sumptuous halls."

Throughout the ruins a love of ornament and display

is visible. In the bas-reliefs are profusive decorations of fretwork fringes, borders of sculptured winged bulls and lions, and stone work of carved roses.

RESTORED MODEL OF THE TEMPLE OF DARIUS.

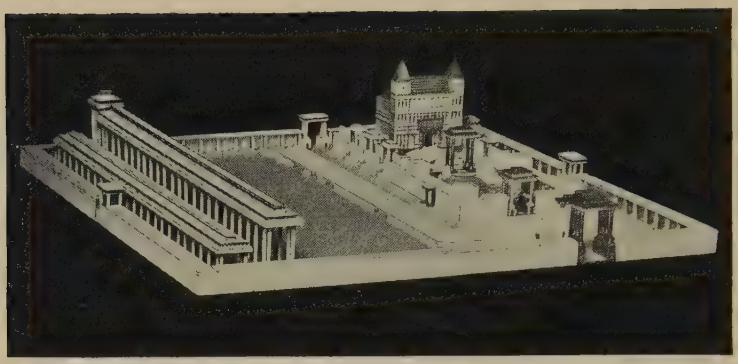
(Copyright by Hatchette & Hall, London. Permission.)

Palace of Xerxes.

The Palace of Xerxes at Persepolis was one of the most splendid structures of the world. "The stones used were of dark gray, cut in gigantic square blocks, and exquisitely polished." "There were portals carved with sculptured figures of animals (winged bulls) 15 feet high, stairways with walls grandly decorated with sculptured figures of colossal size, showing warriors with spears, gigantic bulls, combats with wild beasts, processions of priests, etc." The great "Throne Room," or "Audience Hall" of Xerxes, was the largest and most magnificent apartment of ancient times. It was 300 feet by

350 feet, with marble pillars 67 feet high, arranged in four divisions, consisting of a center group six feet every way — 72 noble columns in all. Behind the "Hall of Xerxes" was the "Hall of Hundred Columns"; and behind that, "The Central Edifice." . . . An inscription on the front of the great portal was translated by Rawlinson — part of it reads thus:

"The great god Auramajda, he it is who has given this world, and who has given life to mankind, who has made Xerxes king."



TEMPLE OF KING SOLOMON.
(Restored Model. Copyright by Carlos A. Butler. Permission.)

VI.

JEWISH ARCHITECTURE.

The Hebrews.

The Hebrews were the descendants of Shem, one of the three sons of Noah. In ancient times these people settled on the plains of Mesopotamia, a region between the upper waters of the Tigris and Euphrates Rivers. About 2000 B. C., a large colony of Hebrews, led by the patriarch Abraham, moved from Mesopotamia to Canaan, situated on the southeastern coast of the Mediterranean Sea. Because of a famine in Canaan, most of the colony emigrated to Egypt, where they were at once put under bondage by the reigning Pharaoh, and kept in a state of slavery for four hundred and thirty years. About 1491 B. C., the "Children of Israel," as they were called, were delivered by Moses from out of the hands of their hard task-masters in Egypt and the whole number, a great many thousands — started back on the long journey to Canaan, from whence they came.

Political History.

The political history of the "Children of Israel" is divided into four periods: 1. From the departure from Egypt, 1491 B. C., until the founding of the monarchy under King Saul, 1095 B. C. 2. From the founding of the monarchy until its division into the two kingdoms of Israel and of Judah, 975 B. C. 3. From the division of the kingdoms to the time the people of both kingdoms were made captives—a part by the Assyrians and a part by the Babylonians. 4. From the time of Assyrians and Babylonian captivity until the Roman Conquest of Judea, 70 B. C., and the destruction of Jerusalem by Titus.

Architectural History.

The grandest achievements of Jewish architecture consisted of the erection of four remarkable edifices: "The Temple of Jehovah," Solomon's Palace, the Temple of Zerubbabel, and the Temple of Herod. The Temple of Jehovah was built by King Solomon, 1011–1004 B. C., on Mt. Moriah, a tongue-shaped ranging hill just outside the city of Jerusalem. In order to build the temple on level ground, it was necessary to make an artificial enlargement of the sides of the hill range. This was done by carrying up enormous walls of heavy masonry to a lofty height and filling in and leveling up the area inside the walls with earth and stone. The ground-base of the temple was a vast rectangular plateau, overlooking the "Holy City," which could be seen for a long distance.

Architectural Details of Solomon's Temple.

The glorious temple of King Solomon was built of white stone, each one of which was dressed, polished,

squared and numbered in the quarry, just outside of Jerusalem. It took three years for the masons to lay the great foundation for the structure. We read in I *Kings*, Chapter V.: "They brought great stones, costly stones, and hewn stones to lay the foundation of the house, and there was neither hammer, nor axe, nor any tool of iron heard in the house while it was in building." The temple buildings comprised a vast accumulation of stone. There were onyx stones, ivory, topaz stones, and stones to be set, glistening stones of many colors, all manner of precious stones and marble stones in the greatest abundance.

The Temple Plateau.

The Temple faced the East, and consisted of three parts: The Porch, The Sanctuary, and The Holy of Holies. The dimensions of the sacred edifice were as follows: length 60 cubits, width 20 cubits, and height 30 cubits. Its many surrounding buildings, great courts, colonnades, pylons, piazzas, chambers, altars, barriers, porticoes, and overlooking galleries supported by long rows of white marble pillars, comprised a vast architectural work — a collection of magnificent structures over half a mile in circumference — rich in decoration, beautiful in outline, and grand in scenic effect and finish. The whole plateau was walled in with white marble and from the lowest part carried up about 400 feet. The outer wall was pierced by nine gates; the inner walls around the courts had thirteen openings. The huge stones for the temple buildings and walls were quarried in the immediate vicinity of Jerusalem. They were pulled up on inclined planes to the plateau floor as it was carried up, and then they were drawn on wooden rollers to their places in the great wall.

Roof, Ceiling, Walls, Doors, and Floor.

The roof of the wonderful building was made of polished cedar-wood, closely fitted, and covered with carved and sculptured bands and plates of gold. The ceiling was made of burnished fir-wood, embellished with gold leaves, sculptured lilies, and pomegranate wreaths of gold. The walls were ornamented with carvings of palm branches, egg-shaped fruits, flowers, and cherubim, all interlaced with carved strips of gold. The floor was made of polished fir-wood, interlaid with bands and plates of gold. There were doors of shining olive-wood, covered with carvings of palms, open flowers, set in interlacing bars and plates of gold; doors of polished fir-wood, decorated with gold designs and carved work and silver doors with sculptured figures on them. The doors of the "Holy of Holies" were made of carved cypress-wood, covered with gold ornaments, put together with gold nails, and swung on golden hinges. There were fifty shekels of gold nails used.

Metal Work, Temple Utensils, Furniture.

We read in the Bible: "King Solomon overlaid the temple — within and without — the beams, pillars, ceiling, walls, floor, roof, and doors, with gold." "He garnished the house with precious stones for beauty." "He made a partition by chains of gold before the oracle and overlaid it with gold." "He overlaid the upper chambers and galleries with gold." "He made two cherubim, each ten cubits high with wings twenty cubits long and overlaid them with gold." He made a vast number of golden pouring vessels, wash basins of gold, thousands of dishes of gold, and snuffers, rings, spoons, tongs, censers, bowls, chains, lamps, and candlesticks of gold. The pot for manna, the high priest's censer, the

Ark of the Covenant, the table of shew bread, Aaron's rod, the mercy seat, the altar, the cherubim on the ark were all of pure gold. It is estimated that the enormous amount of forty-eight thousand tons of gold and silver were collected to decorate the temple, besides tons of brass and iron, and the countless number of precious stones, gems, marbles, and rare pieces of wood.

All of the flesh hooks, shovels, flesh pots, and lavers were of brass. There was a huge brazen laver, and an enormous molten sea on the backs of twelve oxen. Two hollow, bronze pillars each 18 cubits high and 12 cubits in circumference, stood at the porch of the temple. The one on the right was called Jachin (God will establish); the one on the left was called Boaz (strength). I *Kings*, 8–46 says: "In the plain of Jordan did the King cast them, in the clay ground between Succoth and Zarthan."

TEMPLE ARCHITECT, OVERSEERS, LABORERS — THE DEDICATION.

Hiram, generally called "Hiram the Builder," of Tyre was the architect-in-chief. He was assisted by three thousand six hundred mechanical overseers, eighty thousand stone masons, seventy thousand ordinary laborers and ten thousand wood cutters, hewers, and carvers. The wood was cut in the forests of Lebanon. The impressive ceremonies of dedicating the gorgeous Temple of King Solomon began on the fifteenth day of the Hebrew month Tisri (September) and the "Feast of the Dedication" lasted a week. The population of the kingdom then was about five million souls. A vast, uncounted multitude assembled in Jerusalem to take part in and to witness the grand dedication. There were thousands of Jewish dignitaries, clad in gorgeous raiment; vast bands of musicians in white; a great army of guards with shields of burnished gold; a host of priests and the

whole congregation of Israel. . . . King Solomon came from his throne. Amid clouds of incense and smoke of altars, he prostrated himself on the floor, and so did the people with him, so overcome were they all with the "Glory of the House of the Lord." Then the king offered a long prayer, the conclusion of which was — "Let your heart therefore be perfect with the Lord our God, to walk in his statutes and to keep his commandments."

TEMPLE OF ZERUBBABEL.

For fifty-two years after the destruction of the temple, the people of Jerusalem saw nothing but its ruins. In 536 B. C., the High Priest Zerubbabel laid the foundation for the second temple. He was assisted by 42,360 liberated captives and built the edifice in just twenty years.

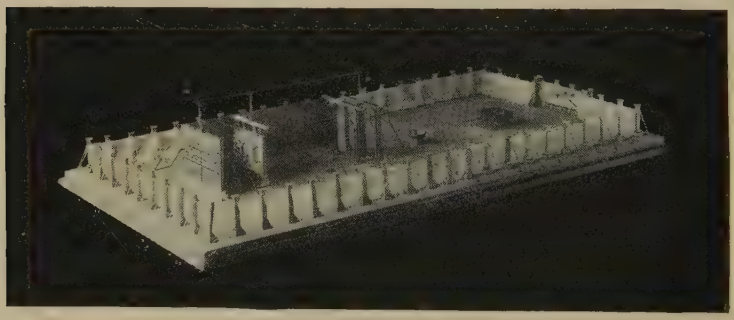
The general plan of the second temple was similar to that of the first, but it was one-third larger in all its dimensions. After it had stood nearly five hundred years, Herod the Great undertook to rebuild it. It took his architects and masons about ten years to do the work. They enclosed the platform with a wall an eighth of a mile square and forty feet above the summit of the mount. This was carried up in some places nearly six hundred feet from the valley below. There were seven massive and costly gates of brass, 15 feet wide and 30 feet high. The "Beautiful Gate" on the east side was of the finest polished brass and 75 feet high.

After one of the most awful sieges recorded in history, Jerusalem was taken by the Romans under Titus, 70 A. D. More than one million Jews perished; the temple was razed to the ground; the city was laid in ruins, and the remnant of the people driven into exile to different lands. . . . Thus was Jewish nationality destroyed. The Jews became wanderers everywhere over the world, and to this day have no national form of government.

The Tabernacle.

The Tabernacle of the Jews was erected by Moses, 1494 B. C., who received the pattern and instruction from the hand of God on Mount Sinai. The Tabernacle was transportable, yet it was a Sanctuary Temple, and was the first capital of the Hebrew nation. There were a great number of specifications given with regard to its construction (see *Exodus*, XXV. and on). As it was the work of the Divine Architect, it was mathematically and scientifically correct.

An examination of the plan of the remarkable structure shows that all lines fall into right angles, triangles, and cubes, and compose a structure of equal strength as



THE TABERNACLE OF THE JEWS.

(From a restored model. Copyright 1906 by Carlos A. Butler.)

if of stone and timber. Though a large part of the outer structure of the Tabernacle was tent work, still it was an object of impressive beauty and glory in white, purple, blue and scarlet, and its added gold, silver, brass and precious stones, varied curtains, its veil of blue and symbolic needlework made it a most unique and peculiar structure. The Tabernacle was moved from place to place for over five hundred years until it was superseded by King Solomon's Temple.

SCULPTURES IN THE TYMPANUM OF THE TEMPLE OF ATHENA, ÆGINA, GREECE.

VII.

GREEK ARCHITECTURE.

Greece.

The kingdom of Greece in Southern Europe comprises now the southern part of the Balkan Peninsula and its outlying islands — an area altogether about as large as the State of Maine. Ancient Greece included more territory — part of what now is Turkey, islands of Crete and Cyprus, and certain colonial possessions in Asia Minor, Africa, and Sicily.

The Greeks.

In ancient times, the general name given to the Grecian peninsula with its islands in the Ægean Sea, as well as its coast settlements, was that of Hellas. The early Greek writers and people called themselves Hellenes. The four chief families, or tribes, of the Hellenes, were the Dorians, the Achæans, the Ionians, and the Æolians. In many respects the Greeks were the most remarkable people of which history bears record.

No other nation ever did so many things so well as they. They were the beginners of a great deal of that of which the modern nations boast. The Greeks were the first people to declare themselves for political freedom, and they gave the first lessons in political science. They produced the first historical literature and founded geometry and physics. They taught and practiced freedom of thought and left the world its very

highest and grandest models in philosophy, poetry, law, oratory, sculpture, and architecture.

Political History.

Grecian history may be divided into four periods: *viz.:* 1. From the Dorian Migration and Conquest, 1104 B. C., to the First Olympiad, 776 B. C. 2. From the First Olympiad to the end of the Persian Wars, 470 B. C. 3. From the close of the Persian Wars to the subjugation of Greece by Philip of Macedon, 338 B. C. 4. From the Macedonian Conquest to that of the Roman Conquest of Greece, 146 B. C. The real history of Greece dates from the First Olympiad, 776 B. C. All that pertains to the Greeks before that time is an uncertain mixture of some actual facts with a great deal of myth and fiction. What is called "The Legendary and Heroic Age" in Greece forms a sort of shadowy background to its history. All ancient Greeks believed that their ancestors were fabulous heroes and demi-gods. Every family, tribe, city, state, village, and kingdom held traditions about its great heroes. They sounded their praises in song and told of their exploits in story and legend. Pre-historic Greece was divided into tribal-groups, settlements, neighboring colonies, districts, cities, and states, governed in some cases separately, in others, collectively, by legendary kings and heroes.

Pre-Historic Architecture in Greece.

The most ancient specimens of pre-historic architecture found in Greece consist of walls, fortifications, gates and tombs built by a people, called the Pelasgi, who were somewhat advanced in civilization, and who occupied parts of Hellenes before the Dorian Migration and Conquest, 1104 B. C. Some remains of such pre-historic

heavy masonry are to be found in Delphi, Samos, Delos, Argos, Thoricus, Tiryns, Phigalia, and other places — much of such ancient work exists in Italy, especially at Cossa, Cortona, Volterra, and Fiesole. The work consists of heavy town walls built around places on high hills and belongs to the period of early Pelasgian architecture. The most important examples of Pelasgic architecture are the walls and "Lion Gate" at Mycenæ, 48½ feet in diameter, and the tholos (or treasury) of Atreus at the same place. The tholos is a beehive-shaped structure, of fine design. It is built of circular courses of hewn stone with pilasters of colored marble decorated with zigzag and spiral ornaments, with interior walls once covered with plates of bronze. It is entered by a huge doorway at the end of a long passage of colossal stone work. The lintel of the doorway is a stone 27 feet long, 16 feet wide, 4 feet thick, and weighs about 130 tons.

Three Orders in Greek Architecture.

There are three orders in Greek Architecture: the Doric; the Ionic; and the Corinthian. The origin of the orders is partly mythological.

1. *Doric Order.*

Dorus, the fabulous ancestor of the Dorians, was a king in Peloponnesus. He built the Temple of Juno at Argos. The people to honor him called the style of the temple columns, the Doric.

2. *Ionic Order.*

Ion was a son of Apollo. He founded a Greek colony in a district called Ionia, on the West coast of Asia Minor. The capitals used in the temple columns of the temples built in Ionia were called the Ionic.

3. *Corinthian Order.*

Callimachus, a noted sculptor of Corinth, noticed one day an acanthus plant entwining its leaves around and over a basket. He saw in the object a new form for capitals on marble columns, so he began chiseling a representation of the basket with its acanthus leaves on the heads of temple-columns. All of the other architects of Corinth began to use the same object as Callimachus, and, in time, the capitals on such columns received the name, "The Corinthian."

ARCHITECTURAL HISTORY AFTER THE "LEGENDARY AGE."

The architectural history of Greece, after the Prehistoric and Legendary Age, has been divided as follows: The Archaic Period — from 650 to 500 B. C. The Transitional Period — from 500 to 460 B. C. The Periclean, or Golden Period, from 460 to 400 B. C. The Alexandrian Period — from 400 to 300 B. C. The Period of Decline — from 300 to 100 B. C. The Roman Period — from 100 B. C. to 200 A. D.

CLASSIFICATION OF GREEK TEMPLES — SPACING OF COLUMNS.

The temples of Greece were classified as follows: Temples in antis, those having a porch and two or more enclosed columns; Dipteral temples, with double lateral rows of columns; Peripteral temples those surrounded by columns; Prostyle temples, those having a porch in front, but no peristyle; Amphiprostyle temples, those having a porch at each end, but no peristyle; Pseudo-peripteral, temples, those having false or engaged columns built into the wall; Pseudo-dipteral temples, those hav-

ing a single row of columns on each side. Temples with four columns in end rows were called tetra style; with six columns, hexa style; with eight columns, octa style; with ten columns, deca style, and so on. The spacing of columns in Grecian temples was according to fixed proportions. Vitruvius explained it in this way:

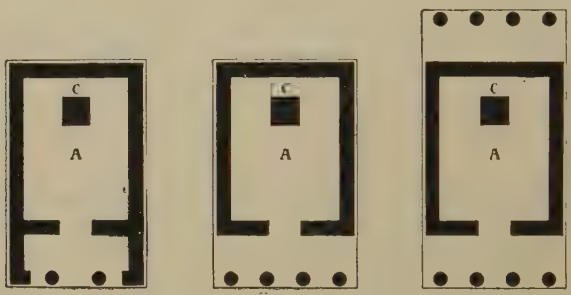
If the columns were $1\frac{1}{2}$ diameters apart and 10 diameters high, they were pycno style; if 2 diameters apart and $9\frac{1}{2}$ diameters high, sy style; if $2\frac{1}{4}$ diameters apart and about $8\frac{1}{2}$ diameters high, eu style; if 3 diameters apart and $8\frac{1}{2}$ diameters high, dia style; if 4 diameters apart and 8 diameters high, aræo style.

Internal Construction of Grecian Temples.

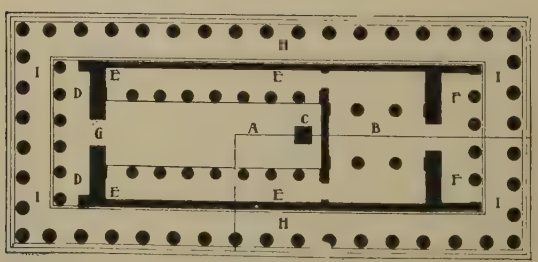
All Grecian temples were shrines, where, in a sacred chamber called the naos, a fine statue of some goddess or deity was worshipped. The naos (A) was the main sanctuary; in many cases, only moderate in size, and not intended to hold great crowds like Christian churches. The statue (C) which represented the divine being was always placed in the end of the chamber. In large temples the naos had a row of columns inside the walls on three sides. The entrance to the naos was through a columnar porch called the "pronaos" (D). In some temples, a smaller chamber was constructed back of the naos and called the "opisthodome" (B). This apartment was used as a place of deposit for all kinds of valuables, gifts, and offerings. The enclosure of the chambers (when there were two) was called the cella (E). The aisle outside the wall of the cella was called the "pteroma" (H) and the whole range of columns around the temple was called the peristyle (I).

How Temples were Lighted.

Much discussion has been indulged in by critics as to the manner in which the naos was lighted. Usually the apartment was without windows. Some claim the naos was illuminated by artificial light. Fergusson holds that the light was brought in by counter-sinking part of the roof, forming a kind of sky-light. Only two temples are reported as having windows.



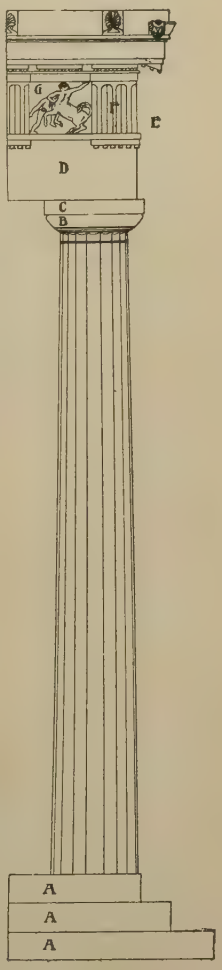
TEMPLE IN ANTIS. TEMPLE IN PROSTYLE. TEMPLE IN AMPHIPROSTYLE.



GROUND PLAN OF THE PARTHENON — ATHENS.

(A) Naos.
(B) Opisthodome.
(C) Statue of Deity.
(D) Pronaos.
(E) Wall of Cella.
(F) Epinaos.
(G) Door to Naos.
(H) Pteroma.
(I) Peristyle.

By an examination of the ground plan of the Parthenon at Athens, which is considered the grandest type of Greek Temple Architecture, we may be able to get an accurate idea of the internal construction of Grecian temples in general.



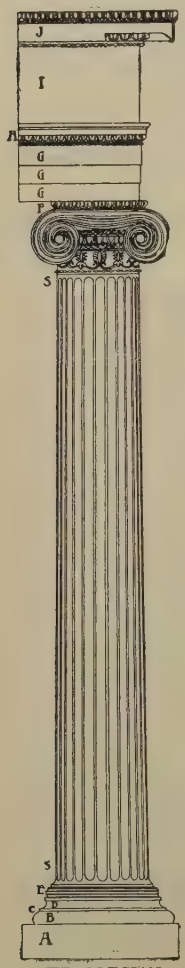
THE GRECIAN DORIC ORDER

Architectural Details of Grecian Columns.

All Grecian columns are divided into three parts: the base or foot, the shaft or body, and the capital or head. When we speak of an order we mean what is comprised in the pedestal, the column, and the entablature, or, the whole top part which is supported. The entablature consists of three parts: the architrave, or the beam upheld by the column; the frieze, or space taken up by the cross-beam; and the cornice or part placed at the ends of the rafters.

The Grecian Doric column is a tapering shaft from six to eight diameters in height, and having from sixteen to twenty shallow channels or flutes. It rises from a three-stepped platform, called the stylobate (A). The capital (B) is a kind of circular cushion ornamented with small grooves (*annulæ*) and has a plain, square cap-plate, called the abacus (C). Upon the abacus rests the architrave (D) having a narrow band or fillet around its edge. The frieze (E) is divided by vertical line-work called

triglyphs (F), thus making square panels called metopes (G). The triangular space in each gable end is called the tympanum.



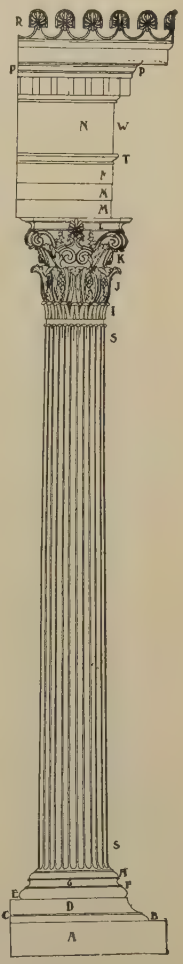
THE GRECIAN IONIC ORDER

In large temples, the space was filled with colossal sculpture which rested on the shelf of the cornice. After ages of discussion among critics on Greek architecture, the conclusion was finally reached that Greek temples had rich decorations of color work on them when they were in their perfect state. Brilliant color schemes must have added greatly to the magnificent appearance of the classic buildings.

Writers claim that often the walls and columns were tinted with orange, yellow and buff; the triglyphs painted sky-blue; the metopes, red, and all the mouldings filled with leaf-shaped ornaments, bands, fillets, and fret-work painted deep blue, light green, old gold and other colors.

The Grecian Ionic column is a tall, graceful shaft, about nine diameters in height. It has twenty-four flutes, with alternating fillets, the fillets being one-fourth the width of the flutes. It stands on a square, flat stone called the plinth (A). Resting on the plinth is a plain convex band moulding called the torus (B), above this is a narrow fillet (C), which separates the torus from a plain concave moulding called the scotia (D). Resting on the scotia is a collection of mouldings wound around close together

into a receding coil (E) forming the escape for the shaft (S). The upper flutings of the shaft are separated from the capital by an encircling bead, above which is a wide horizontal band of sculptured ornaments consisting of honeysuckles with tendrils. Extending over, resting upon, and partly covering this ornamental band is a thick double scroll, resembling two rolls of wall paper joined. Above this part is a thin circular abacus plate (F) with carved rim upon which rests the architrave (G). The architrave consists of three plain, flat bands crowned by fine sculptured mouldings (H). The frieze (I) is a plain, flat surface between the architrave and a richly ornamented cornice (J).



THE GREEK CORINTHIAN ORDER

The Greek Corinthian column is a fine twenty-four fluted shaft, ten diameters in height. The base is a square, flat stone — a plinth (A). Resting upon this and issuing from it in receding forms, in succession, are the following: a torus (B), and a fillet (C), a scotia (D), and a similar fillet, thinner than the first, a second torus (E), on which rests a third fillet, and another scotia (G), above which is a sloping band (H), forming the escape for the shaft (S). The upper flutings of the shaft usually ends at an encircling bead or wreath of ornaments. Above this is a band of water leaves, pointing upward. Then another band of acanthus leaves, larger, and pointing further out than the leaves

in the first row. The second band has a row of open flowers fixed at equal spaces around the foliated capital (J), which, to all appearances serve the purpose of "sculptured buttons" to hold the wide leaves in place. Above the second band of leaf-work is another reversed bell-shaped collection of long leaf-forms, bending outward. Rising from the centre of this girdle of wide leaves are four conventional figures, each of which ends in a honeysuckle apparently leaning against a concave abacus plate. The abacus plate (L), rests on four scrolls which are underneath it, one at each of the corners. Above the concave abacus plate, are three equal bands forming the architrave (M), with a plain crown moulding above it (T). The frieze (W), is a plain, wide band, above which, is a fine cornice (P), upon the top of which is a single row of open sculptured honeysuckles (R), arranged at equal spaces, and joined by festoons.

The Caryatides.

Besides the three orders of columns just described, the Greeks made use of another order in which the statues of female figures occupied the place of columns. This is called the Caryatic Order, and the figures, the Caryatides.*

The origin of this order is as follows: The account given by Vitruvius is that at Caryatis, a city of Greece, the Persians put the males to death and led the females into captivity. The architects of the time to perpetuate the memory of those women substituted their statues for columns. Another account is that the Goddess Diana was worshipped in a temple at Caryatis and that statues called Caryatides were placed about in the temple to

*Note: One of the figure-columns, or Caryatides, is in the British Museum, London. It was put there by the order of Lord Elgin in 1816.

represent the nymphs and virgin worshippers of the goddess. The latter account is the one most generally believed — that the caryatides were marble statues of priestesses in the Temple of Diana, at Caryatis.

The only existing example of the use of marble statues of female figures for columns is on the porch of the Pandrosus, the Erechtheion — a temple on the Acropolis, at

PORCH OF PANDROSUS — ERECTHEION, ATHENS.
THE CARYATIC ORDER.

Athens. Originally six Caryatides supported the roof of the porch. Each of the remaining five draped statues, representing females, stand on square stone plinths. On the head of each figure there rests a circular moulded block above which is a deep rectangular abacus plate,

supporting the entablature of the porch without a frieze. The figures are sculptured models of grace and beauty.

Greek Temples of the Archaic Period.

The Archaic Period of Greek architecture extended from 650 to 500 B. C. All temples of the period, built in Greece, were of the Doric order. In Sicily, there are extensive temple ruins. There were six Doric temples at Selinus, including the great unfinished Temple of Zeus, three at Agrigentum, one at Syracuse, and one at Ægesta. In Italy, the most important temple of the period was the Temple of Neptune at Pæstum, while in Greece, the most famous was the Temple of Jupiter, at Corinth.

Transitional Period in Greek Temple Building.

The Transitional Period in Greek architecture, 500 to 460 B. C., showed a marked advance and improvement in the architectural details and construction of Greek temples. The sanctuary was made larger; the columns in better proportion; the sculpture was of a higher order; the capitals were more elaborately finished, and the whole work from base to cornice was more symmetrical, architectural, and beautiful. Some of the most celebrated temples of this period were the Temple of Athena at Ægina, the Temple of Jupiter at Olympia, the Temple of Hercules (called the Theseum) at Athens. The last named work is a peripteral temple of the Doric order and is the best preserved of all the ancient Greek religious buildings.

Periclean Period in Greek Architecture.

The Periclean Period in Greek architecture was from 460 to 400 B. C. It is called "The Golden Period in Greek Art." It was during this period in which

Athens was adorned with those public buildings, temples, and other works of art which have been the admiration of the world for ages. Those remarkable buildings and other creations of art stood on the Acropolis — a long, flat-topped, rocky eminence that rises with some abrupt cliffs. It was enclosed by walls of heavy masonry and had nine gates, the principal one of which was the Propy-

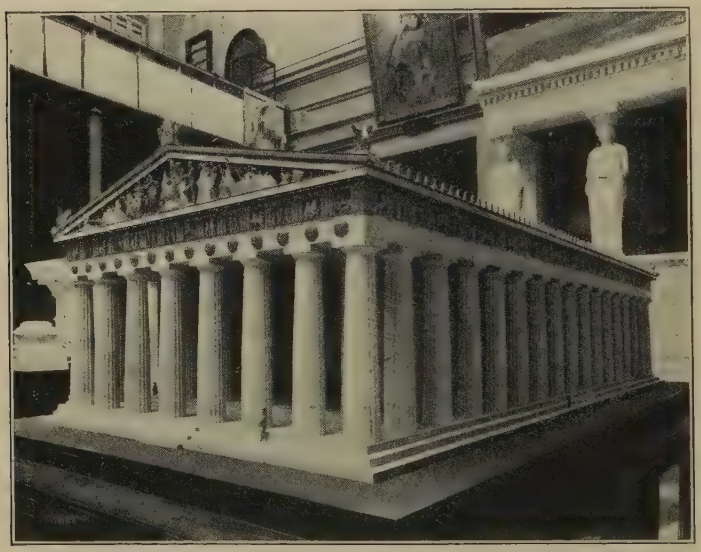
THE THESEUM AT ATHENS.

(Photo by W. H. Rau, Philadelphia.)

læa, built of marble by the architect Mnesicles. Some of the art adornments on the Acropolis were the Parthenon, the Erechtheum, the temple of Nike Apteros, and the statue of Athena. The Theseum, a hexa style Doric temple, once had fine sculptures of the exploits of the mythical heroes, Theseus and Hercules.

The Parthenon at Athens.

The masterpiece of Greek architecture and the grandest work of the Periclean Period was the octa style peripteral temple, the Parthenon on the Acropolis at Athens. It was built of white pentelic marble on a basement of limestone. The chief architects were Ictinus



THE PARTHENON AT ATHENS.
(Restored by Ch. Chipiez. Photo from a Model in Metropolitan Museum, New York.)

and Callicrates. It was erected to the honor of the Goddess Minerva. A colossal statue (forty feet high) of this goddess stood in the sanctuary. This grand piece of sculpture was by Phidias. It contained forty-four talents of gold. The whole cost of the statue was about one hundred and fifty thousand pounds sterling.

The Parthenon was 228 feet long and 101 feet wide.

The cella, or main sanctuary, was 194 feet long and 70 feet wide. The naos, 96 feet long and 63 feet wide. The ceiling was of highly polished wood, divided into square spaces and richly colored. The temple had sixty-two large and thirty-six small Doric columns, fifty life-size statues in the pediments, a frieze-work 524 feet long with ninety-two metopes — fifty-six of which are still in existence. The subjects of the sculpture in the metopes were different contests of gods and giants. The subject of the entire frieze-work was "The Festive Procession to the Acropolis at the end of the Parthenon to present the Goddess Minerva a robe made by Athenian Virgins." The subject of the sculpture in the East pediment was "The Birth of Athena"; the West pediment, "Strife between Athena and Poseidon for the possession of Athens." These sculptures were all made in strong relief, on a bright red background. The inner walls of the temple were filled with paintings. The whole edifice, glowing in color-work, rich in countless treasures of art, grand in sculptural adornments and glorious in its perfect architecture, beauty and majesty, stood absolutely unrivalled by any of the other temples of ancient Greece.

Alexandrian Period in Greek Architecture.

The Alexandrian Period extended from 400 to 100 B. C. The grandest architectural work in the erection of sacred edifices during this period was that of the world famous Temple of Diana, at Ephesus. The Ionic dipteral Temple of Diana, at Ephesus, was one of the largest Grecian sanctuaries ever built. It was 425 feet long, 220 feet wide, and had 128 marble columns 60 feet high, thirty-six of which were carved. The chief architect was Cherisphron. The temple was burned 356 B. C. by a vandal named Herostratus, on the night Alexander the

Great was born. The roof of the temple was of cedar wood and probably was the only part destroyed.

Myers says in "Ancient History": "The value of the gifts to this temple was beyond all calculation. Crœsus gave liberally of his wealth to ornament the shrine; kings and states vied with one another in splendid donations.

TEMPLE OF DIANA AT EPHESUS.

(Photo by Soule Art Company. Permission.)

Painters and sculptors were eager to have their master pieces assigned places within its walls, so that it became a great national gallery of paintings and statuary."

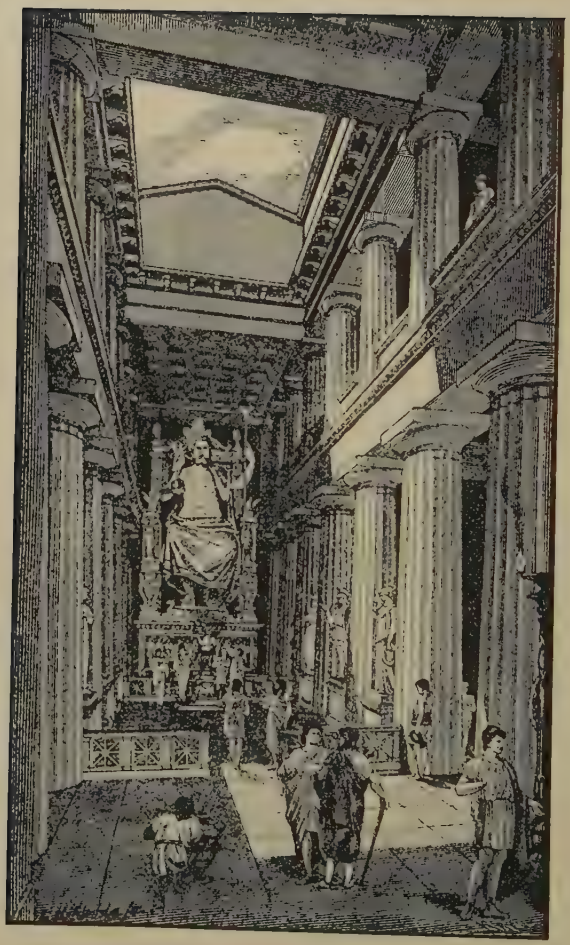
It contained a portrait of Alexander, painted by Apelles at a cost of thirty thousand dollars. The Temple

of Diana on account of the grandeur of its architecture, its size, splendor, and art decorations was ranked among "The Seven Wonders of the World."

Sacred Games and Festivals in Greece.

The Greeks had four great national festivals, or games, which were held at stated times in honor of the gods. They were: the Olympian Games, celebrated in honor of Zeus, at Olympia; the Pythian Games, given in honor of Apollo, at Delphi; the Nemean Games, held in honor of Jupiter, at Nemea; and the Isthmian Games instituted in honor of Neptune, at Corinth. The games were always celebrated near some shrine, or temple, where there was a statue of the god in whose honor the games were given. A belief existed that the gods were present, at least constructively, at the games and took delight in seeing such contests given in their honor. The contests consisted of wrestling matches, boxing bouts, foot-races, pitching quoits, jumping, and chariot-racing. The winners in the games were crowned with wild olive wreaths; statues were erected to them; they were honored on public occasions; they were not taxed and were boarded at public expense.

Olympia, the scene of the games, contained the choicest treasures of Grecian art. There were vast buildings such as the Temple of Zeus, Temple of Metroum (mother of the gods), the Pelopium, Ten Treasures Houses, Temples of Eileithyia and Venus, the Stadium and the Hippodrome. There were multitudes of images, hundreds of statues, many monuments and altars, and great masses of artistic votive offerings made of gold, ivory, brass, and marble. Pliny, the Elder, states that in his time there were over three thousand statues on the plain of Olympia.



TEMPLE OF ZEUS AT OLYMPIA.
(From a restored model by G. Rehlender. Courtesy of Ginn & Co., Boston.)

Temple of Zeus at Olympia.

The Doric Temple of Zeus, at Olympia, was one of the most celebrated of the sacred buildings of Greece. It contained in the naos, a majestic statue of Zeus, sixty feet high. It was made of ivory and gold and was the work of Phidias, the most eminent of Greek sculptors. "The Father of the Gods" was represented as seated on a splendid throne made of ivory, precious stones and gold. His hair, beard, and robe were made of gold, his eyes of brilliant gems and his scepter of gold. It was the sculpture-marvel of the age. In Greece it was thought a great misfortune for any one to die without having seen the statue of Zeus at Olympia.

Roman Period in Greek Architecture.

After the magnificent Periclean and Alexandrian Periods passed away a change came over the character of Greek architecture. There was a decline, a loss in strength, vigor, artistic thought and finished execution. Greek art never afterwards regained its ancient glory. A few of the works which were produced during the period of decline had in them some of the old Greek power, but most of the art creations of the time were weak and lifeless. The grandest temple erected during the Roman Period was the Corinthian Temple of Olympian Zeus, at Athens. It had one hundred and twenty-four lofty Corinthian columns, fifteen of which are now standing. It was begun by the Greek architect, A. Epiphanes, 170 B. C., and completed by Roman architects, 130 A. D. It had one hundred and sixty-eight Corinthian columns 56 feet high and $5\frac{1}{2}$ feet in diameter. It was 354 feet by 171 feet in ground-base and stood on a vast terrace encircled by a high-buttressed wall. In the naos, there was a gold and ivory statue of Zeus, and all around on the

outside of it a great many statues, including that of Emperor Hadrian.

Grecian Gates, Colonnades, Arches, Theatres and Tombs, etc.

The grandeur of Grecian architecture was not confined by any means to temples. There were theatres of vast seating capacity, with splendid architectural adornments; carved marble thrones and seats; decorated marble walls for wings and groups of fine statuary; lofty colonnades of marble connecting public buildings; magnificent gates with entrances leading through ranges of splendid pillars, the main passageway roofed over and having sculptured reliefs in the pediments; monumental arches; beautiful peristyles and pergolas for promenades; exhedras, or long, high-backed, ornamented marble seats overlooking the sea; immense hippodromes and stadias for races and games; thermas for bathing, and gymnasiums for choral singing, recitation of poems, lectures and discussions.

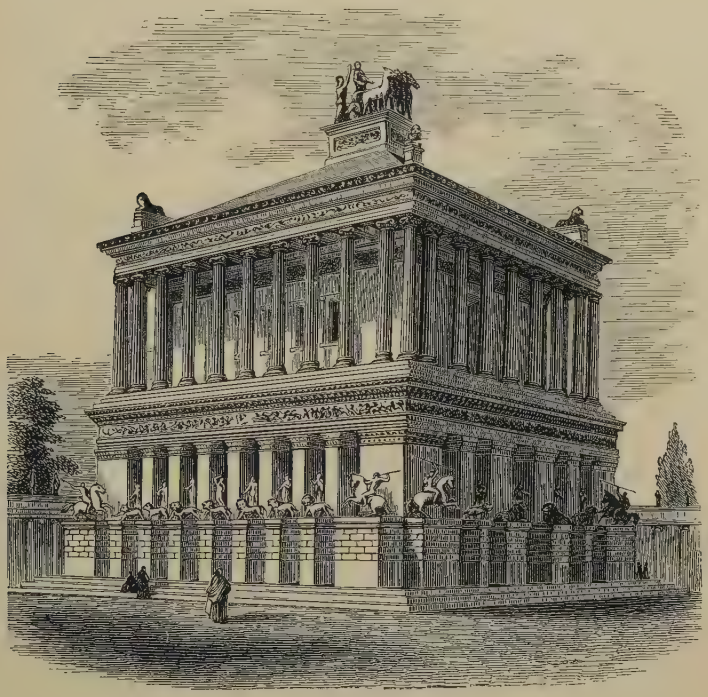
The Mausoleum at Halicarnassus.

The grandest work of Grecian tomb architecture was that of the Mausoleum at Halicarnassus. This magnificent monumental tomb was ranked as one of the "Seven Wonders of the World." It was erected to Mausolus of Caria by his widowed queen, Artemisia, in 354 B. C.

The architectural work was of the Ionic style and was designed by the architects Pythius and Satyrus. The sculptures upon it were made by the greatest masters of the age — the leading one of whom was Scopas. The base of the structure was of marble work fifty feet high.

The sepulchre measured about one hundred feet

square. Above the base was a cella, surrounded by thirty-six Ionic columns. The sides of the tomb were decorated with a great many statues and sculptured



MAUSOLEUM AT HALICARNASSUS. (From a restored model.)

(Reproduced from Appleton's "New Practical Cyclopedia." Copyright, 1910, by D. Appleton & Company.)

figures. On the top of the monument, which was one hundred and forty feet high, there was a bronze statue of King Mausolus, standing in a chariot of marble, drawn by four bronze horses.

VIII.

ROMAN ARCHITECTURE.

Geographical Divisions of Italy.

Italy is divided, geographically, into three parts: Northern, Southern, and Central Italy. In ancient times there was a region called "Latium," situated between the Tiber and the Liris Rivers. This section was inhabited by the Latins, the most important of all the early settlers. They were for the most part shepherds and farmers. It is claimed that in those primitive times there were thirty small settlements within "Latium," which formed a a confederation or league, the leading town of which was called "Alba Longa" (Long White City), because the houses were built along on the sides and summit of a white-looking ridge of hills. The leadership of this league was soon taken away from "Alba Longa" by a strong, warlike tribe, called "Ramnes," who made a settlement on the south bank of the Tiber about fifteen miles from the Mediterranean Sea. In course of time those people were called "Romans" and their town, Rome.

Tradition and Early Political History.

According to tradition, Rome was founded by Romulus, about 753 B. C., and from that time, until 509 B. C., was governed by seven kings as follows: Romulus; Numa; Tullius Hostilius; Ancius Marcius; Tarquinius Priscus; Servus Tullius; and Tarquinius Superbus. Tarquinius

Superbus, the last king, was such a cruel tyrant that the people rose against him and sent him into exile about 509 B. C. After the banishment of Tarquinius, called "The Proud," the government was reorganized and a republican form was adopted. Two magistrates, called "consuls," were elected as rulers. They were Lucius Junius Brutus and Tarquinius Collatinus. Their term of office under the new constitution was for one year. The Republic of Rome lasted from 509 B. C. to 31 B. C. In 31 B. C., the Roman Empire was established under the reign of Augustus Cæsar. The Empire lasted from the reign of Augustus until the dethronement of Romulus Augustus by Odoacer, 476 A. D.

THE ROMANS.

The ancient Romans were a strong military people who secured their territory by war and almost all of their wealth by conquest. From the very first they showed a warlike disposition to conquer and govern other tribes. After overcoming all of the other league-towns and gaining control, Rome, the outpost settlement on the Tiber, began extending its dominion, multiplying its rescources, by force of arms, until at last the great city became the acknowledged capital of the civilized world and its sole governing power for half a thousand years. In character, the Romans were rigidly firm, self-willed, obstinate and determined — a people who showed no weakness, indecision, or fear in matters pertaining to the public welfare and their own upbuilding. They had a deep, all-absorbing national spirit which made them ardently patriotic; unswerving in the performance of any public duty; obedient to Roman Law; and wonderfully courageous as soldiers. All Romans were filled with the over-mastering ambition to make Rome supreme in the government of nations.

Architectural History. — Walls. — Gates.

The architectural work really began with the founding of Rome on the Palatine Hill. Settlements were made upon other hills, until Rome extended over seven of them. It was then called, "The City of Seven Hills." The names of those hills were the Palatine, Esquiline, Viminal, Aventine, Capitoline, Quirinal and the Cœlian. The hills were really great bastions, joined together by high, stone-capped ridges of earth and stone walls. The Romans were masters of practical engineering and masonry. One of the earliest examples of strongly constructed work was a long, vaulted drain-passage, or sewer, called the Cloaca Maxima, built about 556 B. C. There were four general divisions of outside walls in Rome. The outside walls were fourteen miles in circumference. The walls were built of brick, with layers of tufa, perpeino, travertine, and silex, stones of volcanic origin. There were in all, at the time Pliny wrote, thirty-seven gates in the walls of Rome. The gates were strong, thick, well-guarded openings, some of which had massive gate houses, bastion towers, pinnacles, and fine decorations. Roman engineers constructed the finest system of military roads ever made — extending all over the empire.

The Porta Appia (Sebastiano).

The Porta Appia is the strong opening where the great ancient highway, the Via Appia (or Appian Road) enters the city. All of the rectangular stones of the lower construction are of white marble. King Theodric built the strong gate-house of stone, taken from the Temple of Mars, which once stood just outside the wall. The Porta Appia is the finest of the gates in the Aurelian Wall. There are two gateways under-

neath massive towers. A Gothic inscription is behind the right hand wooden gate and records the repulse of an attack made on Rome by King Louis of Bavaria, in 1327 A. D.

GATE OF ST. SEBASTIANO, ROME.
(Photo by Alinari & Cook, Rome.)

The Porta Santa Paulo.

The Gate of Saint Paul is a compact work of architecture — the most picturesque of all the gates in Rome. There is a strong, thick, double-gateway, flanked with towers and high walls. At one side, and built into the wall, is the Pyramid of Cestius, a structure faced with smooth marble slabs, having a base of travertine stone ninety-five feet square. The pyramid is one hundred and fifteen feet high. It was built 30 B. C., as a tomb for Caius Cestius Epulo, a wealthy Roman citizen, who died

12 B. C. He was a prætor, tribune of the people and one of the Septembiri or priests who superintended the solemn sacrificial banquets at Rome. He left a large sum of money for the erection of a pyramidal monument to himself. The work was joined to, and made a part of, the Aurelian Wall at the time that line of fortification was constructed. The pyramid is faced with slabs of white marble a foot thick. When the work was in its perfect

PYRAMID OF CESTIUS — ST. PAUL'S GATE — ROME.
(Photo by Alinari & Cook, Rome.)

condition, it was flanked by two fluted columns resting on travertine bases. A colossal bronze statue of Caius Cestius once stood there. Some of its remains are now in the Capitoline Museum, Rome.

Aqueducts of Rome.

In order to have pure water, Roman architects constructed vast lines of aqueducts, in the channels of which water was brought to Rome from distant springs and lakes. There were in all fourteen of those long ranges of arched stone work. Four of the same old aqueducts supply the city with wholesome drinking water now. This system of obtaining water was begun by Appius Claudius about 313 B. C. He built the first aqueduct, the Aqua Appia, which brought water from a spring in the vicinity of Palestrina, of higher elevation, seven miles from Rome.

THE CLAUDIAN AQUEDUCT, ROME.
(Photo by Alinari & Cook, Rome.)

The Claudian Aqueduct.

The Claudian aqueduct brought water from the vicinity of Subiaco — a distance of 45 miles.

The Anio Novus, which flows above the Aqua

Claudia, brought water over a distance of sixty-two miles. This aqueduct ran beneath the surface of the ground until it was six miles from Rome, then it was gradually taken up on massive stone arches, in places one hundred feet high, and carried over low places to the city.

Pliny, in writing of the Roman aqueducts, says: "If one will consider the abundance of water supplied to public baths, fountains, fish-ponds, artificial lakes, galley-fights, pleasure-gardens, and private houses in Rome, and consider the difficulties surmounted, the distance from which the water was brought, he will confess that nothing so wonderful as these aqueducts can be found in the whole world." The Aqua Claudia was begun by Emperor Caligula and completed by Tiberius Claudius I, 51 A. D. It is a great work of Roman architecture. It required the labor of over thirty thousand men during eleven years to build it.

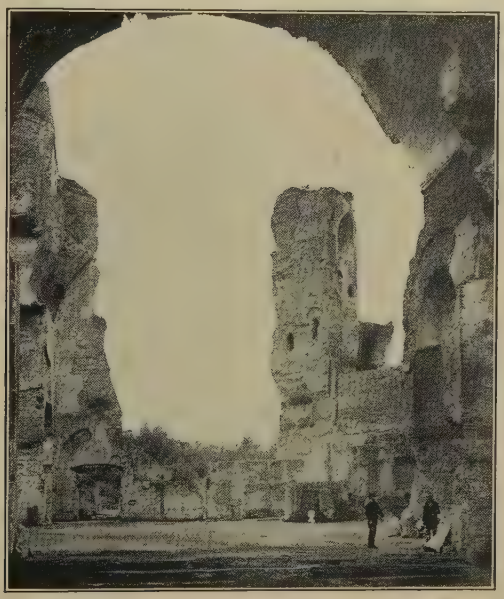
ROMAN BATH HOUSES.

During the period of the empire, Emperors Nero, Titus, Trajan, Commodus, Caracalla, Decius, Constantine, and Diocletian erected magnificent bathhouses in Rome. The fine architecture of those buildings, with their internal and external decorations of art, the adornments their surrounding pleasure-gardens, galleries, and porticoes — made them among the most conspicuous and magnificent architectural works in "The Eternal City."

Baths of Caracalla.

This splendid work of architecture was begun by Emperor Caracalla, 212 A. D., and completed by Emperor A. Severus. It was stupendous in size, being 1720 feet in length by 375 feet in width, and rich in interior ornament. It had one thousand six hundred marble seats in it. "It

had granite columns from Egypt and marble panels in the chambers carved in Numidia." The floors were full of pictured mosaics, scenes, portraits of victorious athletes, etc. The ceilings were brilliant with fine schemes and designs in color-work. The whole vast interior was radiant with beauty. It had great picture-galleries and museums



RUINS OF BATHS OF CARACALLA, ROME.
(Photo by Alinari & Cook, Rome,)

of statues, libraries, fountains, reading rooms, a stage for performance of comedy, a gymnasium for athletes, and an arena for foot-racing and wrestling. Thousands of people could take baths (hot, tepid or cold) in a day, The courts and walks contained some of the finest sculpture in the world, such as, the Farnese Bull; the Farnese Hercules; the Colossal Flora; and the Venus Callipyge.

TRIUMPHAL ARCHES IN ROME.

Triumphal arches had a prominent place in early Roman architecture. The finest specimens of those splendid works are in the Roman Forum.

The Arch of Titus.

The Triumphal Arch of Titus stands in the Forum. It was erected A. D. 75. The material of which the

ARCH OF TITUS, IN THE ROMAN FORUM.
(Photo by Alinari & Cook, Rome.)

arch is composed is porphyry, travertine, and marble. Four fluted columns of porphyry support the ends of the arch and as many marble ones adorn the corners. Midway between these spaces is a series of marble reliefs. The ancient sculptures have the following subjects: Sacrificial Procession (Titus bearing the Golden Candle

Sticks and Shew Bread); Titus in a chariot drawn by four horses with nobles before him carrying laurel wreaths and the Fasces (a bundle of rods denoting power); Victory placing a crown on the Emperor's head. The vault of the arch is ornamented with sculptured roses and in the center is a fine relief, the chief figure of which is Titus — "the Conqueror of Jerusalem."

Arch of Septimus Severus.

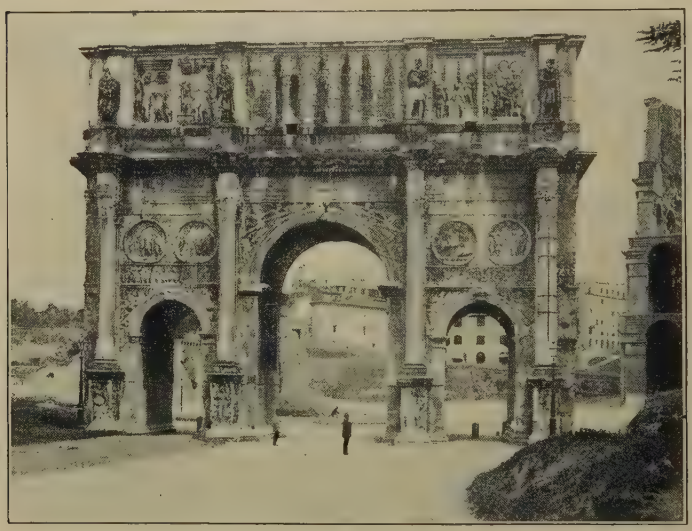
The Triumphal Arch of Septimus Severus also stands within the Forum. It was built by the "Senate and People of Rome," A. D. 205, in honor of Emperor Severus and his two sons, Caracalla and Geta. It has three arcades and two transversal arches. Twelve columns of Parian marble adorn the faces of the arch. They stand upon massive pedestals which are sculptured in fine relief work. The subjects which constitute the series of marble pictures are all battle-scenes representing the Emperor's victories over the enemies of Rome — the Parthians, Arabians, and the Adiabenes. Six bronze horses drawing a chariot, containing statues of Emperor Serverus and his sons once stood on the top of this arch. They are now over the gateway leading into Saint Mark's Church in Venice.

Arch of Constantine.

The Arch of Septimus Severus stands in one end of the Roman Forum; the Arch of Constantine, in the other.

This is the largest, best preserved, and finest of the structures of its kind in Rome. It has three openings. Eight Corinthian columns rest on pedestals, carved in relief, on both faces of the work. The columns are surmounted by eight large statues. There are eight

fine medallions on the front and sides of the arch and large sculptured scenes in relief, the subjects of which are: 1. Sacrifice to Apollo. 2. Battle of Milesian Bridge. 3. Consultation of an Oracle. 4. Constantine addressing people in the Forum. 5. Thank Offering to Diana. 6. Trajan speaking to his Army. 7. Triumphal Entry of Trajan into Rome, 99 A. D. 8. Audience of Con-



ARCH OF CONSTANTINE, ROME.
(Photo by Alinari & Cook, Rome.)

stantine and the Dacian King (Decebalus). 9. Sacrifice to Silvanus. 10. Boar Hunt, Bear Hunt and Lion Hunt. 11. Building of the Appian Way through Pontine Marshes. 12. Sacrifice to Hercules. 13. Prætorians Fighting with Dacians. This is a composite arch; part of it was made from sculptures, taken from Trajan's Forum and built into the work. Constantine was the

first Christian Emperor of Rome and the arch was built and dedicated by the "Senate and People of Rome" to commemorate Constantine's victory over the forces of Maxentius, 311 A. D.

COLUMN OF MARCUS AURELIUS, ROME.
(Photo by Alinari & Cook, Rome.)

HISTORICAL COLUMNS IN ROME.

Another fine line of Roman architecture is that of historical columns—the most important of which at Rome are: the Column of Emperor Marcus Aurelius, and that of Emperor Trajan.

Column of Marcus Aurelius.

The Column of Marcus Aurelius is an historical object lesson. It is a splendid shaft made of twenty-

eight blocks of white marble. It is one hundred and thirty-seven feet high and is crowned now with a statue of Saint Paul. A sculptured host of figures wind around the great column. They show a series of events and incidents in the conflicts of Marcus Aurelius with the Marcomanni and other German tribes on the Danube. The figures are so cunningly chiseled that they gradually increase in height as they wind around the pillar—those at the bottom, the middle part, and the top seem to be of the same size to an observer standing near the base. Near the place where the column stands, a temple was once erected to Emperor Marcus Aurelius.

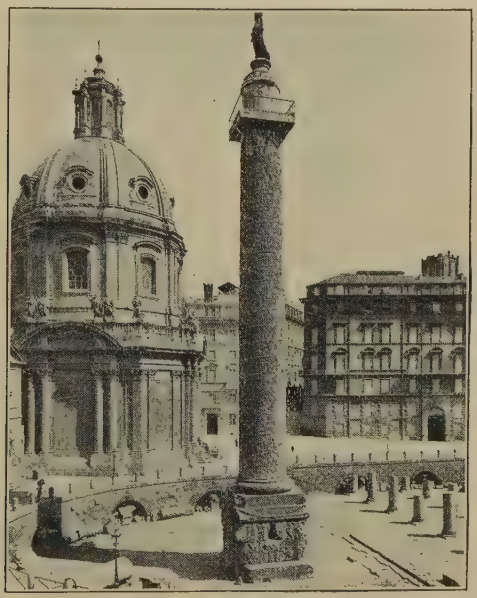
Column of Trajan.

The Column of Trajan stands in the midst of the ruins of Trajan's Forum. It is a magnificent monumental pillar one hundred and forty-seven feet in height and made of thirty-four blocks of Carrara marble. The pillar is composed of monolithic drums averaging five feet in diameter. It is surmounted now by a statue of Saint Peter. A spiral band of fine sculptures, $3\frac{1}{3}$ feet wide and 660 feet long, wind around the shaft, arranged according to the same rule of perspective as those on the Column of Marcus Aurelius. The sculptured reliefs are over two thousand five hundred in number, counting all the figures and animals, and represent scenes in the life and military campaigns of Emperor Trajan. The remains of Trajan were placed in a golden sarcophagus and buried beneath the base of the beautiful column.

The Forum of Trajan.

Trajan's Forum was the grandest of all the fora built in Rome. Modern architects by an examination of seals, coins, and historical accounts have been enabled

to reproduce the architectural plan of this collection of splendid edifices. The forum was designed by Apollodorus of Damascus. The ground plan comprised four parts: the forum proper; the basilica; the libraries; and the temple. The details were as follows: there was an arched main entrance to a great area (six hundred



COLUMN OF TRAJAN — TRAJAN'S FORUM, ROME.
(Photo by Alinari & Cook, Rome.)

and sixty feet in width) in shape of a parallelogram; double rows of shops and market booths, one above another, in form of crescents, faced upon a wide court, in the centre of which was an equestrian statue of Emperor Trajan — this was the Forum or Market Place. It had six side entrances, through double rows of marble pillars,

and one main entrance at the end through a grand archway flanked by lofty pillars. Adjoining this forum, and of equal width, was the Basilica Ulpia, a magnificent structure with fluted columns of yellow marble. (Ulpia was the family name of the Emperor.) . It had on the sides double, on the ends, triple, rows of marble columns, a gilded ceiling, walls faced with Luna marble and the floor paved with precious stones arranged to form pictures. The place is held in sacred memory by Christians, for in this grand basilica Emperor Constantine, in 312 A. D., before a vast assemblage of the Roman notables and people, publicly renounced Paganism and the worship of mythical gods, and proclaimed Christianity as the religion of the Roman Empire. Alongside and of equal width to the basilica was an extensive library; on one side rolls of Grecian parchments in cedar boxes were kept; on the other, Roman parchments. Between the two libraries stood the lofty column of Trajan and separated from this by a narrow passage was the grand temple-court surrounded by columns. In the centre of the court stood the dipteral temple erected to Trajan by his adopted son, Emperor Hadrian.

THE ROMAN FORUM.

In yon field below,
A thousand years of silenced factions sleep.
The Forum, where the immortal accents glow,
And still the air breathes and burns with Cicero.
—*Lord Byron.*

The word "forum" means a market-place. The Roman Forum was the first market-place in Rome. When Rome was a small settlement upon the slopes of two hills, the Palatine and the Capitoline, the Forum was simply

a trading point where butchers, fish dealers, hucksters, gardeners, florists, etc., supplied the people with necessary articles which were kept in market stalls.

Classification of Forums.

As the City of Rome grew in population many other public squares, called "forums," were added: such as, the Forum of Emperor Augustus; the Forum of Emperor

THE ROMAN FORUM.
(Time of Emperor Marcus Aurelius. From a restored model. Photo by W. H. Rau, Philadelphia.)

Nerva; the Forum of Emperor Trajan, etc. The increase in the number of such plazas and market-places led to a classification of the forums as follows: "Fora Venalia" and "Fora Civilia." The former were market and trade centres; the latter, places where citizens assembled to discuss daily events; hold political meetings; where judges tried criminals; where orators spoke to crowds;

where generals harangued troops; and where all sorts of matters pertaining to the civil, military, municipal, and national life and doings of the city and the nation were publicly discussed. Such convenient squares for public gatherings served to make the forums news-centres, thereby supplying the place of the daily newspaper.

Area of the Forum.— History.

The original Forum covered a small space (780 feet by 165 feet). It was surrounded by many fine works of architecture, and in time, became a place of power — a central point which had a strong influence upon the ancient world. Its history is one of war, flood, and ruin. In the earlier centuries it was entire, but from the fifth century onward, Rome was deserted for ages, and the Forum, from its position, was buried, deeper and deeper, by silt and mud drift from continual overflows of the Tiber running by it.

The ruins in the Roman Forum have been dug up and excavated from many feet of drift, deposits, and rank vegetation, yet, as Dr. Forbes says, in his "Rambles in Rome": "Mutilated fragments still speak of its former grandeur, ancient writers of its fame, and living authors of its past and present history."

Architectural Adornments of the Forum.

The Forum, before the fall of Rome, certainly was a mass of splendid work in marble, and a scene of great architectural beauty. It was lined with splendid temples and gorgeous basilicas, having glowing architraves, gilded entablatures, exquisite capitals, and god-like statues. It was a collection of dazzling splendor, the chief glory and pride of "The Eternal City." Bordering

upon, within, and adjacent to it were magnificent buildings which shed glory upon Roman architecture. These were as follows: Temple of Castor and Pollux; the Basilica Julia; the Tabularium; the Temple of Concord; Temple of Saturn; Temple of Vespasian; the Senate House; the Basilica Æmilia; Temple of Antoninus; Temple of Vesta; Temple-tomb of Cæsar; Temple of Venus and Roma; the Rostra ad Palmam; Temple of Romulus; Shrine of Janus; Temple of the Penates; Arch of Titus; Arch of Septimus Severus; Columns of Phocas; Arch of Fabius; Portico of the Twelve Gods; Palace of Caligula; House of Cæsar; Duilian Column; Mænia Column; Shrine of Venus; Equestrian Statue of Marcus Aurelius; Arcade of the Pearl Dealers; the Colosseum; Arch of Constantine; Basilica of Constantine; Basilica Portia, and the Comitium.

Building Materials and Columns in the Forum.

Nine chief varieties of colored marbles were used in decorating the temples and buildings that faced on the Forum. The main building material consisted of tufa, Lapsis Albanus (a volcanic rock), silex, travertine, and sun-dried Roman brick. In all of the fine structures surrounding the Forum, the Romans made other forms of architecture from the Grecian models — (the Doric, Corinthian and Ionic) — creating what they called the Roman Doric, Roman Corinthian, Roman Ionic, and Roman Composite Columns.

Historical Memories of the Forum.

There is a strong fascination and charm about the crumbling arches, pillars, and walls of the old, old Forum. It is a place where one may sit and let fancy take wing. Whilst gazing upon the groups of

broken columns and decayed ruins, one cannot help picturing in mind the great events which once happened there — the splendid works of Roman architecture once seen there — the magnificent military triumphs and processions which passed there — the multitudes that assembled there — the fine orations delivered there — the panorama of scenes on Roman holidays and feast-days displayed there — and all of the grand exhibitions of Roman life and Imperial power once shown there.

THE PANTHEON.

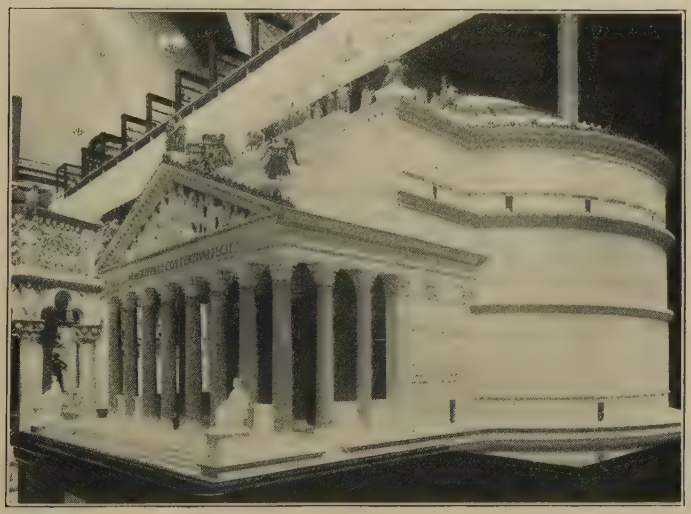
Pantheism.

Pantheism is defined by Webster as "a doctrine that the universe, taken as a whole, is God." The Greeks and the Romans were Pantheists, or believers in Pantheism. Archæologists claim that the Pantheon is the most perfect example of that style of architecture called Roman. The building was erected by Agrippa, son-in-law of Augustus, 27 B. C. It was consecrated by him to Jupiter, "Father of all gods."

Architectural Plan of the Pantheon.

The original plan of the old Pagan temple is seen on the coin of Agrippa's successors. There is a representation of a large court in shape of a parallelogram, the entrance under a great triumphal arch. The roof of the court was upheld by long rows of columns and the entrances from the peristyles into the court under a system of arches. Opposite the entrance under the great triumphal arch was the temple of the Pantheon, in front of which was a very tall seated statue of Jupiter (now in the Vatican Museum). The entrance to the building was under a great portico 110 feet long, 44 feet deep, and 46 feet high. There are sixteen Corinthian

columns of Oriental granite, five feet in diameter, supporting the porch. The doors are of thick, heavy bronze, so large that two persons can scarcely close them, they have strong bronze posts, which fit in deep sockets in the stone, and are actually built in the wall, making it impossible to unhinge them.



THE PANTHEON AT ROME.
(From a restored model in the Metropolitan Museum of Art, New York.)

Interior of the Pantheon.

The interior of the Pantheon is a scene of architectural grandeur. It is a magnificent rotunda, one hundred and forty-two feet in diameter, with a dome of the same width. The only light the building gets is through a circular aperture, thirty feet in diameter in the top of the dome. The floor is made of granite, porphyry and costly marbles, arranged in beautiful patterns. Around the surface of its alabaster walls are seven large niches, in

which there once stood statues of the gods. In front of the edifice was a vast arcade, filled with images and statues of Roman emperors. Marcellinus, a Roman writer, says: "The Pantheon, with its vast extent, its imposing height, and the solid magnificence of its arches and the lofty niches rising one above the other like stairs, was adorned with statues of former emperors." Pliny, another ancient Roman writer, says: "It had some of the finest works the world has ever beheld." The old temple was changed into a church by Pope Boniface IV, in 609 A. D. It so remained until "All Saints Day," 830 A. D., when it was solemnly dedicated "to all martyrs," by Emperor Phocas. The Pantheon contains the tombs of Victor Emanuel II., Raphael, and other great Italians.

THE ETRUSCANS.

The Etruscans occupied all of Italy from the Apennines, the Tiber, and the Po, westward to the Mediterranean Sea. Their history dates back of the ninth century B. C. They had a beautiful system of mythology, and must have had many splendid temples within which were statues of gods and goddesses. None of those temples remain; our information concerning their architecture must be obtained from other structures.

Etruscan History. — Art. — Architecture.

The Etruscans left remains of some of the finest tombs ever erected. They used the arch, and were fine workers in bronze. Thousands of specimens of coins, blackware, scarabs, jewelry, vases, urns, bronzes, terra-cotta plates, gold and silver ornaments, mirrors, amber toys and glass trinkets show the artistic spirit of the nation. Etruscan history covered the period — from 1044 B. C. to 44 B. C. Their language is preserved in

many inscriptions on sepulchral chambers, columns, arches, urns, etc. It is one of the singular things that, although Etruscan art has such an important place in the world, still their language (that is, their ancient language), is not read to-day.

Roman Orders in Architecture.

The Romans copied the arch from the Etruscans and the three orders of architecture from the Greeks, and, to the three orders they added two others of their own. The names of those orders which were added are the Tuscan, something like the Doric, and the Composite, which combines details of the Ionic and the Corinthian. The Romans were especially fond of the Corinthian Order. The Orders in Roman architecture were merely ornamental and not regarded, as were Grecian Orders, as the most necessary thing in the work.

Uses and Treatment of the Roman Orders.

The Romans made many changes in the original Orders of Architecture. Some of these are as follows: They left off the fluting from hard stones like porphyry and polished the surface to show the natural color; they put columns on high pedestals; engaged columns were used as buttresses; they made flat wall-columns for decorative use; the pediments with the Roman Corinthian Order were steeper than those made by the Greeks; shafts of columns were sometimes corded instead of being fluted; columns which were very tall were sometimes partly fluted and partly corded.

Periodical Divisions of Art.

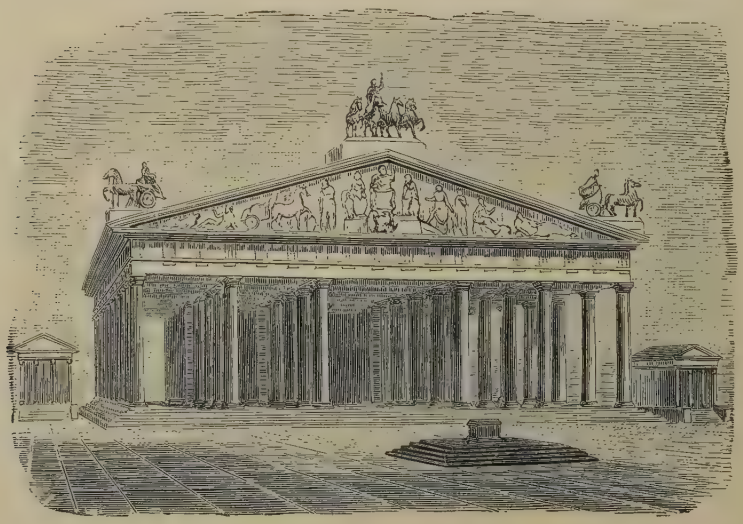
Roman Art is divided into three distinct periods: 1. From the Roman Conquest of Greece, 146 B. C., to the close of the reign of Augustus, 14 A. D. 2. From 14

A. D., to the reign of Hadrian, 138 A. D. 3. From the reign of Augustus to near the Fall of the Roman Empire, 410 A. D.

ROMAN TEMPLES.

Temple of Jupiter.

Ancient Rome contained many Pagan temples and shrines where mythological gods were worshipped. Some of the temples built by Roman architects were rectangular in shape; others were circular and vaulted in form. The



TEMPLE OF JUPITER, CAPITOLINUS, ROME.
(By courtesy of Chas. E. Merrill Company, New York.)

most celebrated of Roman temples was the Temple of Jupiter — on the Capitoline Hill. It was built by Tarquinius Superbus, the last of the Roman kings, and was dedicated 509 B. C. It stood upon a rocky eminence, the base of the sacred edifice being two hundred feet

square. It had three rows of lofty pillars on the front and two on the sides. It had three cellæ, or sanctuaries; that of Jupiter in the center, and one for Minerva and Juno on either side.

The roof was covered with tiles partly made of gold; the three doors were very large, made of brass and adorned with plates of gold; the floor was of many colored marbles; the walls were hung with a vast assortment of rich and costly trophies of war and in the sanctuaries there were magnificent statues of Jupiter and the two goddesses, Juno and Minerva. It was estimated that the value of riches in plate, rare stones, the roof made of gilded tiles, the gates, statuary, the marble and silver decorations, and the interior hangings of captured valuables far exceeded twenty-five million dollars. The Temple of Jupiter Capitolinus was destroyed 83 B. C., during the Civil War in Rome. Three other Pagan temples were afterwards built, at different times, on the same site. A Christian Church stands on the place now. For centuries the Temple of Jupiter was used as a sacred and secret depository for gold coin and bullion, belonging to the Roman state. In 390 B. C., the Gauls took two thousand pounds of gold from it as a ransom. In 82 B. C., the Army of Maurius, the Younger, rifled and sacked the ancient building, taking from it thirteen thousand pounds of plate, jewels, and gold. It seems almost incredible to believe such statements in history.

The Colosseum.

"A noble wreck in ruinous perfection."—*Byron.*

The Colosseum, sometimes called the Flavian Amphitheatre, is the mightiest ruin in the world, and one of the most noted landmarks of Roman history. The chief architect was Aterius, whose monument is now in

the Lateran at Rome. The vast work was erected in the centre of the ancient city and for over four hundred years it was a place of popular resort; a place where gladiatorial combats were held; and where the fierce passions of the Romans were gratified by witnessing scenes of blood.

THE COLOSSEUM AT ROME.
(Photo by Alinari & Cook, Rome.)

TIME OF ERECTION.— DEDICATION.

The great structure was begun by Emperor Vespasian, 72 A. D., and finished by his son, Emperor Titus, 80 A. D. After its completion the Roman Senate celebrated the event by giving a national holiday for one hundred days, during which time performances, consisting of shows and combats, were given in the arena, and over five thousand wild animals were slain. It is said that a large part of the Colosseum was built by captive Jews, thousands of whom were brought as slaves to Rome by Titus, after his conquest of Jerusalem in 70 A. D.

ARCHITECTURAL PLAN.— COLUMNS.

Although this stupendous work of architecture has been standing for over one thousand eight hundred years, yet, in its present condition of ruin and decay, enough evidences remain to indicate what the plan of its construction was, and, to prove that its former state was one of colossal grandeur and beauty. The architectural outlines show that the Colosseum was four stories in height at the time of its completion, and had four rows of marble columns and light pilasters, arranged in tiers extending all around on the outside. The arrangement of its outside columns was as follows: Columns of the Doric order opposite the first story; Ionic columns opposite the second; and Corinthian columns opposite the third and fourth stories. Open spaces, formed by the arches, were between the columns.

GROUND BASE FORM.— DIMENSIONS.— AWNING.

The great amphitheatre is in the form of an ellipse. Its longest diameter is 658 feet; shortest diameter, 558 feet; height 160 feet, and circumference, 1900 feet. It covers nearly five acres of ground. It did not have a roof. The audience was protected from rain, or from the heat of the sun, by an immense awning, which could be let down over the top of tall posts. The present uneven appearance of the walls is due to the fact that for over two hundred years the Colosseum was a kind of "public quarry" where Roman architects and builders helped themselves to all the stone they wanted, removing during that time about two-thirds of the best material. A number of the finest palaces and buildings in Rome were built of stone taken from the Colosseum. The outer walls were constructed of immense blocks of travertine held together by iron clamps.

ENTRANCES. — SEATS.

There were eighty arched ways of entrance with Roman numerals over each, except the one which was used by the Emperor.* There were seats in the immense building for abouty eight thousand persons, and standing room for perhaps ten thousand more in the aisles, corridors, and on the steps.† A wall of polished marble surrounded the arena — an open space, elliptical in form (298 by 277 feet), where the games, shows and gladiatorial combats were given. A few feet above the arena was the podium, a kind of extended platform of marble, upon which were marble seats for the Emperor, Roman senators, distinguished visitors, vestal virgins, and the manager of the entertainment. The podium was protected from the arena by iron netting. Back of this was a double portico of marble, which extended all around the building. Behind the podium were three successive tiers of marble seats, called "cavæ," for patricians, the wealthy class; Roman knights, ladies of rank, principal magistrates, other high officials and army officers. Above this was a tier with wooden seats for plebeians, the humble class; and still above that was a tier for the common rabble, called the "pullati" (or those without togas), a class usually denominated "Gallery gods."

ARENA. — ANIMAL DENS.

The ancient arena was a movable floor, upheld by strong timbers. It had openings, through which the wild beasts came to fight the gladiators. About ten feet below the arena was an encircling row of animal dens, with iron doors, built against the foundation of the arena

* The Imperial entrance was between arches Nos. 38 and 39, which is without number.

† One author claims that the Colosseum could accommodate 52,000 persons in place of the number usually given.

wall. The dens sloped so that they could be flushed with water and drained into the great sewer which extended underneath. Aqueducts brought water from reservoirs in the Esquiline and Cœlian hills to the Colosseum. There were two openings half way up on the sides of the walls for the water to come in. It was carried in flumes all around the building, and down to the animal dens under the arena, where there were drinking trenches for the beasts. Whenever naval combats were given, the wooden arena was removed and the whole floor-space below, which was stone, was flooded with water. There was a sluice gate for its escape to the great drain underneath.

Gladiatorial Combats in the Colosseum.

It was customary for successful candidates to public office in Rome to give shows and gladiatorial combats as a means of celebrating their elections. Such bloody exhibitions pleased the people, but often cost the candidates thousands of dollars. When Trajan was elected Emperor he gave a combat in which one hundred and twenty-three couples of gladiators fought to the death with short swords, and when Julius Cæsar was elected Ædile (Superintendent of Public Buildings), he arranged for a combat in which three hundred couples fought each other. There were schools, or clubs, in many places in Italy where professional gladiators taught men to fight in the arena of the Colosseum at Rome, and other arenas of amphitheatres in different parts of the Roman Empire. Slaves were taught to fight, and, if they were successful in killing a certain number of men or slaughtering a certain number of wild beasts, they were given their liberty. In very expensive combats the gladiators appeared, dressed in silver armor, carrying shields, plated with gold, and swords inlaid with jewels in the handles. On such occa-

sions the floor of the arena was sprinkled with gold dust in place of sand.

Commodus.— Combats Abolished.— Martyrs.

Sometimes men of high rank fought as gladiators in the combats. We read that Emperor Commodus, whose tastes were low and brutal, fought and killed two hundred lions and many other wild animals in the Colosseum. He always wore a lion's skin as a mantle, and had his hair powdered with gold dust. Gladiatorial combats were abolished by Emperor Honorias, 404 A. D. The last show of wild beasts was given by King Theodoric at the beginning of the sixth century. The last performance was a bull fight in 1332 A. D. Many martyrs were devoured by wild beasts in the Colosseum, during the long period of the persecutions of early Christians at Rome. Saint Ignatius was brought from Antioch and thrown to the lions in the arena. In 1750, Pope Benedict XIV. consecrated the place to the hallowed memory of the Christian martyrs.

The Colosseum as an Architectural Type.

The Colosseum, considered from an architectural standpoint, was one of the most remarkable structures in the world. When we think of its enormous size, the great thickness of its walls, their one-time adornments and facings, the character of masonry shown in the joinings of its huge stones, the fine columns, and splendid arches, which lent such majesty and beauty to its massive form, the arrangement and elevation of its seats, the adjustable awning, the means of quick exit for such vast crowds of people, we must conclude that it is the greatest type of Roman architecture left to us.

IX.

BYZANTINE ARCHITECTURE.

Origin of Name, Byzantine Architecture.

In the year 330 A. D., Emperor Constantine transferred the seat of government of the Roman Empire, then consisting of two divisions, the Eastern and the Western, from Rome to the old Greek city of Byzantium on the Bosphorus. He re-named the city "New Rome," but afterwards it was called Constantinople, the name it bears to-day. Constantine was the first Christian Emperor of Rome. Under his patronage a large number of churches were erected all over Roman territory. The architectural style of the buildings differed from any others in several particulars, so by common usage the name Byzantine Style was given to such structures because they were constructed mainly by plans of architects in the city of Byzantium.

Periodical Divisions of Byzantine Architecture.

Byzantine architecture was divided into two periods, as follows: 1. From the establishment of the capital of the Roman Empire at Constantinople, 330 A. D., to the reign of Justinian, 527 A. D. 2. From 527 A. D., to the beginning of the eleventh century.

Characteristics of Byzantine Style.

The characteristic principles of the Byzantine Style were as follows: an endless application and use of the

Roman arch; a massive cupola covering the whole central portion of the building supported by lofty columns, held together by massive arches — sometimes semi-cupolas support the four arms of the great cupola — pointed minarets at corners of the structure; foundation drawn in the form of the Greek cross; the invariable feature of the apse, or semi-circular space, swelling out from the line of the building like a bay-window; square-headed doors, semi-circular windows, square capitals on columns; and projecting mouldings, richly decorated with designs of foliage.

Churches of Byzantine Period. — Basilicas.

The ground plan and internal construction of the Christian Churches of the Byzantine Period was a copy of the Grecian Basilicas. The origin of the name "Basilica" is as follows: In the ninth century, the Grecian Emperor, Basil I., formed a code of laws (originally consisting of sixty books). Justice was administered by archons, or judges, in a structure of the form of an open portico or "pergola." It had long rows of columns, fronting which was a deep stage, the entire width of the portico, and back of that an apse or semi-circular recess, where the archons, suitors, advocates, and jurymen sat. In course of time, one of the archons was called "Basileus" and the Court-Hall, "the Basilica." From that time on all such structures were called "Basilicas." Byzantine architects adopted that form in building Christian churches.

Churches of Byzantine Style.

The Byzantine style of architecture was carried by the Greek Catholics into Russia. The great church of St. Basil, in Moscow, is of the Byzantine style, as are a

great number of the Greek churches all over the dominions of the Czar. The style was popular and extensively used in church-building throughout western Europe. The most noted examples of the Byzantine School of Architecture to be seen now are: the Cathedral of Charlemagne, Aix-la-Chapelle; the Cathedral of San Vitale, Ravenna; the Church of St. Mark's, Venice; and Church of St. Sophia at Constantinople, the grandest of all.

CHURCH OF ST. MARK'S, VENICE.
(Photo by Carlo Naya, Venice.)

CHURCH OF ST. MARK'S, VENICE.

The Church of St. Mark's is in the form of a Greek Cross. It was built upon an artificial foundation made of piles and stones. A vast amount of costly material was placed in this world-famous edifice. The interior is lined with a tapestry of exquisite marbles. It has in

it the precious stones of the nations. The inside of the roof glitters with gold and the walls glisten with alabaster. The vaulting overhead is a continued series of imagery, symbolization, and picture. "It is a glorious blending of the human and divine." It shows the power of art in religion. Its great marble columns, magnificent statues, arches, and mosaics have been the praise of generations.

Many of the best works in architecture originated from the desire to make an outward expression of the inner emotions of religion. Religious adherents, whether Pagans, Buddhists, Mohammedans, Confucianists, Shintooists, Jews, or Christians, have shown their finest conceptions of beauty and architectural skill in the erection of temples, shrines, mosques, cathedrals, and places of worship. In 829 A. D., the body of St. Mark the Apostle was removed from Alexandria, Egypt, and buried under the high altar in St. Mark's Church, and thus he became the patron saint of Venice.

Church of St. Sophia, Constantinople.

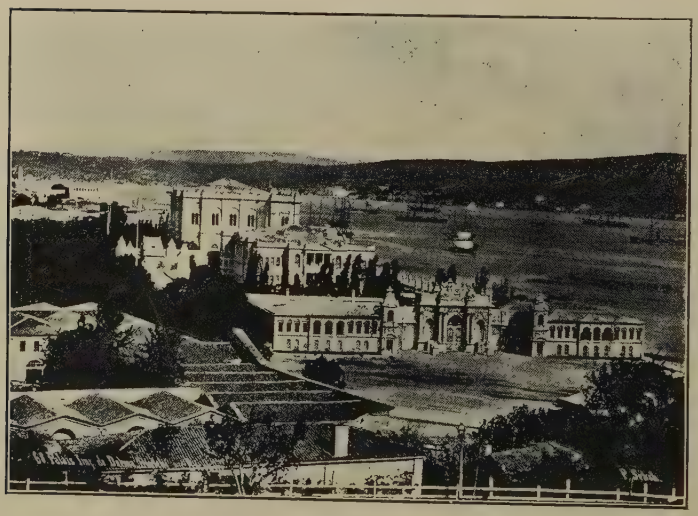
Byzantine architecture reached its climax in that marvellous edifice, St. Sophia, at Constantinople. It was built under the direction of Emperor Justinian and dedicated December 26, 537. There were two leading architects, Isodorus and Anthemius. In the ground-plan St. Sophia is almost an exact square. The floor is a vast collection of richly colored marbles and precious stones made into many patterns, mosaics, and ornamental designs. The walls are encrusted with brilliant gems and rare marbles carried up to the base of the vaulted domes. There are one hundred and seven grand columns, forty on the ground floor, sixty-seven in the galleries. These form a magnificent series of arcades — all of the pillars have Byzantine capitals. Some of the columns

are of dark green marble from the Temple of Diana at Ephesus; others, dark red porphyry from the Temple of the Sun at Baalbec. The gorgeous interior of the glorious sanctuary shows every variety of marbles: Phrygian white marble with rose colored stripes; green marble from Laconia; blue marble from Lydia; black Celtic marble with white veins; Bosphorus marble with black veins, and stone from Egypt filled with stars. There is an harmonious blending of figures, lines, colors, and

CHURCH OF ST. SOPHIA, CONSTANTINOPLE.

forms in this wonderful building. The great central dome, one hundred and seven feet in diameter, rests upon four enormous arches springing from the upper corners of the walls. Behind the stupendous vault on the East and West are two semi-domes of diameter equal to the large dome. The upper and lower galleries have

a variety of groined vaults, filled with decorative designs. The domes all glow with splendid gold-grounded mosaics, designs of stone color-work, rich carvings, and rare patterns of inlaid art. When Emperor Justinian entered the finished edifice he exclaimed: "Glory to God Who hath counted me worthy to complete such a work. Solomon, I have surpassed thee!"



IMPERIAL PALACE OF DOLMA-BAYTCHE, CONSTANTINOPLE.
(Photo by Soule Art Co.)

X.

SARACENIC ARCHITECTURE.

The Saracens.

In the beginning of the seventh century, a new power appeared — the Saracens (Eastern Arabs). They were followers of Mahomet, a great religious leader from Arabia, who, with sword in one hand and the Koran in the other, headed a movement toward making a conquest of the world and forcing its people to embrace the new faith. They made a conquest of all the peninsulas of Arabia; then — Syria in 632–639, Persia in 632–651, Egypt in 638, Africa in 709, Spain in 710–713, and also gained some foothold in India. They made an invasion of France, but in 702 the Saracenic forces were met by an army of Franks under Karl Martel, and after a terrific battle, lasting seven days at Tours, the Saracenic power in Europe was completely broken. Mahomet died in 632, but his successors (the Caliphs) carried forward the wonderful movement. The Saracens, in building Mahometan mosques, palaces and tombs, used a new style of architecture, differing from the Byzantine, the Roman, and the Greek in some particulars, and from this originated the name, Saracenic Architecture.

Characteristics of Saracenic Style.

The special things to be noted in Saracenic Architecture are as follows: Round and pointed minarets with encircling galleries; pointed bulbous domes, spires,

cupolas, and semi-domes (rising under the great dome); extensive portal arches, exterior decorations — exceedingly fine (and especially in enamelled terra-cotta tiling); etchings in marble and metal, exquisite settings and inlaid work; rich and gaudy coloring, and great ingenuity in all of the finer details of ornamentation.

Countries Having Saracenic Architecture.

The style is chiefly represented in Persia, Syria, Arabia, Egypt, Turkey, parts of India, and Spain. In Spain the style is called Moorish architecture, because Spain was overrun by Moors — a branch of the Saracens. The Saracens were not a race of architects at the beginning. The period when they began making structures, having specialities of architecture, was about the middle of the seventh century.

SARACENIC ARCHITECTURE IN EGYPT.

Some of the most important architectural examples of the Saracenic style in Egypt, are the following mosques in Cairo: The Mosque of Tulun, 879 A. D., the Mosque of Mohammed Ali; Mosque of Sultan Hassan; and the Mosque el Azhar, founded 973 A. D.

Mosque of Sultan Hassan.

The "Superb Mosque," or that of Sultan Hassan, is the finest existing work of Saracenic mosque architecture. It was erected by Sultan Hassan, 1356 A. D. It is in the form of an irregular pentagon at the ground-base. The entrance is through a gateway sixty feet high. It has a grand dome, great pointed barrel vaults, vast courts, a sanctuary, richly decorated, and a door mounted with bronze and inlaid with gold. This mosque has been

greatly admired by art critics and travellers for ages on account of its beautiful ornamentation.

TOMB MOSQUE OF SAID BEY.

This is the finest of the tomb-mosques at Cairo. It has a lofty sculptured dome, great bronze doorways, fine courses of masonry, and a beautiful minaret with elegant galleries. The interior has a great deal of artistic carving in ivory and marble. The whole structure shows the work of masters in architecture.

DOME OF THE ROCK (MOSQUE OF OMAR), JERUSALEM.

SARACENIC ARCHITECTURE IN PALESTINE.

The old city of Damascus has some examples of Saracenic style. El Walid, built 705 A. D., and Jami el Umami are among the most important.

Dome of the Rock.

The Dome of the Rock at Jerusalem (sometimes called "The Mosque of Omar"), is a beautiful edifice having some features of Saracenic style. It is built on the exact site of King Solomon's Temple. In 684 A. D., Abd el Melek constructed the octagonal dome. On the lintels of some of the doors are inscriptions dating 831 A. D.

The entrance to the structure is through arcades. There are rows of fine pillars from the Temple of Jupiter and other sacred buildings. It has a great bulbous dome, fine arches, alabaster columns, gorgeous windows, richly variegated designs in mosaics, passages from the Koran, artistically inscribed with interwoven characters, and figures winding around the edifice forming a splendid frieze. In the centre of the building is a rock 57 feet by 43 feet by 6 feet, from which the Mohammedans believe that their prophet took his flight to Heaven.

SARACENIC ARCHITECTURE IN TURKEY.

When the Turks captured Constantinople in 1453, they seized upon all the best forms of architecture they could find and began the construction of Mohammedan mosques, containing some features of the Saracenic and Byzantine styles. The most important, in an architectural sense, are the Imperial mosques built by the Sultans.

Mosque of Suleiman I.

This is a grand and noble work of architecture. It was built in 1553, by the great architect, Sinan. The structure is 225 feet by 205 feet over all. The entrance is through a magnificent gateway into a great rectangular court, surrounded by cloisters covered by domes, upheld

by pillars of white marble, granite and porphyry. The dome is 86 feet in diameter, 156 feet in height, and its great lateral arches are upheld by four monolithic shafts of granite. The walls of both the lower floor and the galleries are veneered with many colored marbles, and the floor with white marble. The Mosque of Shah-zadeh, erected 1548, by Suleiman I., to his son, is a structure having great beauty of outline and richness in finish.

MOSQUE OF SULEIMAN I., CONSTANTINOPLE.
(Photo by Soule Art Company, Boston.)

Mosque of Ahmed I.

The Mosque of Ahmed I. is a grand example of the Saracenic style. It measures 235 feet by 210 feet. It has a splendid portal opening into a fore-court surrounded by cloisters under small domes. It has a stone roof, supported by four great fluted pillars. The decorations of its walls and arches are exceedingly fine. Its exterior is very imposing. It has six beautiful minarets.

Ahmed I. showed his zeal and pride in the edifice by working upon it with his hands once each week until the magnificent building was finished.

Imperial Tombs at Constantinople.

The Turbehs, or tombs, of the Imperial rulers of Turkey, are remarkable for their great architectural beauty.

Tomb of Roxalena.

The tomb of Roxalena, wife of Soleiman I., is one of the most perfect and beautiful examples of Saracenic tomb architecture in Turkey. It is beautifully decorated internally with tiles and arabesques.

A splendid arcade surrounds the mausoleum chamber, which is octagonal in form and covered by a magnificent dome.

SARACENIC ARCHITECTURE IN PERSIA.

There are many strikingly beautiful examples of Saracenic architecture, especially consisting of mosques and shrines, to be found in Persia.

Shrine at Mahm.

The Shrine at Mahm was erected in the sixteenth century, in honor of Shah Namat Ulla. It is a superb piece of work. It has a blue dome artistically covered with Arabic designs and mosaic patterns, two lofty minarets with galleries, and carried from the base to the cornice of the minarets are engaged columns of rare beauty. The interior is not so imposing as the exterior. A costly Persian carpet with large medallions covers the floor, which is of the finest material. The facade and minarets are exquisitely laid in mosaics. The openings are all pointed above the main entrance. On the flat cornice is an inscription.

Shrine at Kum.

The Shrine at Kum was erected to the honor of Fatima and several Persian monarchs, kings, and princes. It is a fine specimen of the Saracenic style of architecture. Its lofty, bulbous dome is gilded and the fine graceful minarets are encrusted with bands of many colored tiles. The minarets have overlooking kiosks in the top of each. The imposing structure stands in a large court surrounded by a wall.

Christians are denied entrance to the place. The tomb-chamber is richly decorated with many beautiful designs in marble.

SARACENIC ARCHITECTURE IN INDIA.

Saracenic Conquest of India.

During the eighth century, the Mohammedans, under the leadership of Kasim, began the conquest of the states of India, but they were soon driven out. In 828 A. D., they renewed the conquest, but were again expelled by the Indian princes. In 1001 A. D., Sultan Mahmed succeeded gradually in gaining power over the people of Southern India. The conflict between the Mohammedans and the Hindoos went on for centuries. It was not until the fifteenth century that Mohammedanism became a ruling power throughout India.

Indian Saracenic Architecture.

The coming of the Mohammedans into India brought about some distinctive lines of change in the architecture of the country. The Indo-Saracenic architects erected many wonderful structures. There is monumental grandeur, dignity, perfection of proportion and harmony of design, in the ornate treatment and execution of their work.

Mosque of Jumma Musjid.

One of the most famous Mohammedan mosques in India is that of Jumma Musjid, at Delhi. It was built by Shah Jehan, 1650 A. D. The entrance to this splendid edifice is through three stately portals approached by a flight of forty steps, one hundred and forty feet long. There are rows of splendid arches opening into a paved court four hundred and fifty feet square, surrounded by cloisters under arcades. The mosque is 260 feet long, 120 feet wide, with a central arched way 80 feet high.

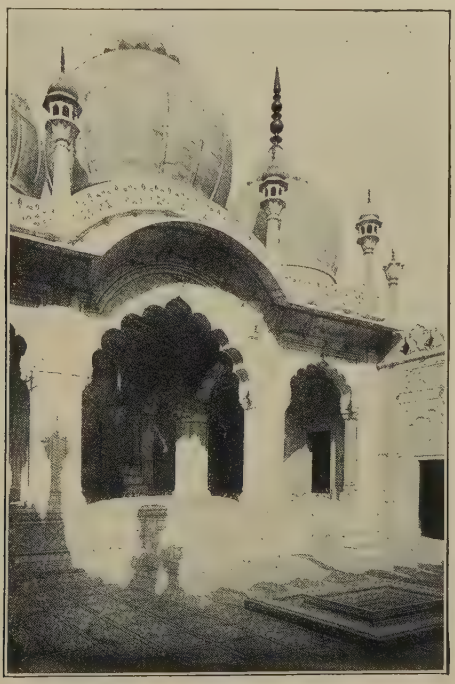
The great mosque was built of red sand stone inlaid with white marble disposed in equal proportions. The domes are of marble with alternate stripes of black and surmounted by golden spires. At the front are two octagonal minarets. The interior presents a scene of splendor. On the west side in large marble niches, and richly inlaid, are sentences from the Koran, one of which is: "There is but one God and Mohammed is his prophet."

The Muti Masjid (Pearl Mosque) Agra, India.

The Muti Masjid is in truth the "pearl of all Mohammedan Mosques." The architecture is pure Saracenic in most of its outlines. It is built of white marble, inlaid with precious stones. There is a magnificent court-yard (154 feet by 158 feet) in front, which has fine arcades and gateways. The mosque was built by Shah Jehan in the seventeenth century and cost three lakhs of rupees ($15,000,000).

It has octagonal pavilions at each of its four corners with kiosks placed as art decorations over the arches and portals of the court-yard. Three fine domes rise over the seven arches of the structure and "seem to grow

up from the roof like a flower-bed on the point of unfolding." The interior of this wonderful structure shows remarkable perfection of proportion, and harmony of constructive design. It has three aisles, splendid corri-



THE MUTI MUSJID (PEARL MOSQUE) AGRA, INDIA.
(Photo by W. H. Rau, Philadelphia.)

dors, beautiful arches, vaulted chambers, marble pavilions for outlook, a great floor of polished marbles and a running frieze of Persian inscription above the arches of the dome.

The Taj Mahal, Agra, India.

The Taj Mahal, at Agra, is the masterpiece of architecture in India. It is the most costly and elegant mausoleum in the world. The Taj is situated in the midst of a tropical garden on the Jumma River — about two miles from Agra.

THE TAJ MAHAL, AGRA, INDIA.
(Photo by W. H. Rau, Philadelphia.)

The Taj — an Imperial Tomb — the Architect.

The wonderful structure was built by Shah Jehan — an Emperor of India — as a place of sepulchre for his wife — Empress Mumtez Mahal, who died 1630 A. D. Shah Jehan died 1666 A. D. Their remains were placed side by side in the magnificent mausoleum-chamber. The chief architect was Ustad Isa, a Byzantine Turk. He was assisted in the work of construction by some of

the most skillful architects in India, Persia, Arabia, and Central Asia. It was the intention of Shah Jehan to build a grand mausoleum for his own remains on the opposite side of the river and to connect the two with a magnificent bridge, but it was not attempted after his death.

Architectural Plan of the Taj.

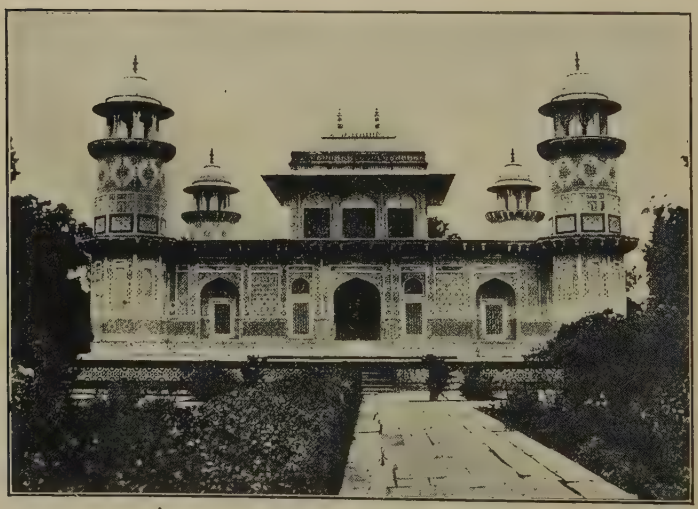
The Taj is a white marble edifice which stands on a base one hundred and eighty-five feet square. It (with the two mosques) stands on a decorated stone platform 18 feet high, 313 feet wide and 800 feet long. The splendid mausoleum consists of four corner chapels with domes. The corner chapels enclose a fine sarcophagus chamber, surrounding which there are eight smaller chambers for priests who chant the Koran and for musicians who play Indian and Persian melodies. Rising over the tomb-chamber from the center and above the chapels there is a bulbous dome built upon a high marble drum. The dome is plated with gilded copper. It is 58 feet in diameter and 80 feet high. There are two mosques, one on each side of the Taj. One of the mosques is for worship, its floor is laid in panelled spaces for kneeling worshippers; the other is a meeting place for the congregation. On the long platform there are four lofty minarets with overlooking galleries. There are four high-arched portals of entrance.

Interior Decorations of the Taj.

The interior decorations of the Taj are surpassingly beautiful. There are all kinds of elaborately designed patterns of marble work, inlaid, carved, etched, and embossed; there are richly ornamented panels and graceful lines of tracery; there are gorgeous windows, a floor

tesselated with colored marbles and a large marble screen enclosing the sarcophagi. The screen is delicately carved with forms of lilies, tulips, the iris, lotus, and other flowers, exquisitely arabesqued. The sarcophagi are covered with imbedded gems, wrought in mosaics; the arches of the portals, windows, cornice, walls, and domes have inlaid chapters of the Koran, the letters being artistically formed of black marble; there are twelve kinds of precious stones: agate, topaz, garnet, carnelian, crystal, diamonds, amethyst, chalcedony, jasper, turquoise, and rubies. Sir Edwin Arnold says:

> Not Architecture! as all others are,
> But the proud passion of an Emperor's love
> Wrought into living stone, which gleams
> With body of beauty shrining soul and thought.



TOMB OF ITIMAD-UD-DAULAH, AGRA, INDIA.

(Photo by Soule Art Co.)

XI.

ROMANESQUE ARCHITECTURE.

Origin of the Term, "Romanesque."

This is a general term given to the prevailing style of architecture in Western Europe after the fall of the Western Division of the Roman Empire. It is sometimes called "The Debased Roman" and "The Round Arched Gothic." Romanesque architecture was confined almost exclusively to the construction of religious buildings. The old Byzantine plan of the basilica is found in the Romanesque, but with some structural differences. For centuries the Byzantine architects quarried massive columns from the ruins of Pagan temples, everywhere they could find them, and built them into their basilicas. At last (about 1000 A. D.) the supply of pillars, shafts, and columns was about exhausted from all the temple ruins within reach, and this necessitated the adoption of some new means of supporting the roofs of buildings. As the work of quarrying columns of such huge size had ceased, the architects began using piers and vaulting arches, features of old Roman architecture. The use of the old Roman elements originated the term "Romanesque."

Periods of Romanesque Style.

The Romanesque style was divided into two periods: Early Romanesque, 476 A. D. to 1000 A. D.; Later Romanesque, 1000 A. D., to end of the twelfth century. There were no very great examples of the style during

the first period. Some typical examples of the Later Romanesque are as follows: Italy, Cathedral of Pisa; S. Ambrogio at Milan; S. Miniato, Florence; and S. Zeno at Verona. France: St. Etienne at Nevers; St. Paul, at Issoire; Notre Dame at Clermont; and St. Trinity at Cæn. Germany: Cathedrals at Worms; Speyer; and Mayence. The last three are about the finest examples of the style.

Features of Romanesque Style.

Some of the prevailing features of the Romanesque style are as follows: the roof has moderate pitch; the use of large square or octagonal towers joined to the building; towers have terminations which are pyramidal in form; the facades of buildings have a profusion of decorations; the walls are very thick sometimes with buttresses; in the ground-plan the upper limb of the cross is short, ending in a circular or octagonal apse; the pillars are clustered in masses; there is a continual use of semi-circular arches; buildings have heavy mouldings and jamb-shafts splendidly carved; small round arches are used as ornaments, forming a frieze under the cornices; horizontal courses of stone separate the stories of towers; there are capitals of cushion-form on piers; the choir-lofts are large and have friezes of fine decorations under them; the interior of roofs have curved in place of rigid lines; doorways are deeply recessed and full of sculptured decorations; single and double galleries of columns with arches run on the upper part of the outside of buildings; piers and vaulting arches are used in place of columns; windows round-headed and without mullions; vaultings and cross vaultings; arched ceilings of stone or brick resting on piers strengthened by buttresses.

GERMAN ROMANESQUE.

Cathedral at Speyer, Bavaria

There are some splendid examples of the Romanesque style of architecture in Germany. The Cathedral at Speyer is an imposing work. It was founded 1030 A. D., by Conrad II. The building is 441 feet long, 105 feet high in the nave, with towers 240 feet high. The front

CATHEDRAL AT SPEYER, BAVARIA.
(Photo by Soule Art Co., Boston.)

has three large doorways: over the central one is the double-eagle; over the side portals, the Lion of Bavaria. The interior is adorned with thirty-two large frescoes representing Old Testament events. The King's choir has two splendid statues: Rudolph of Hapsburg, by Schwanthaler; and Adolph of Nassau, by Ohnmacht. Nine German emperors and three empresses are buried in the great sanctuary. In 1146, St. Bernhard preached the Crusade in it.

Cathedral at Worms.

The old city of Worms in Germany, is famous as being the place where Martin Luther, the leader of the Protestant Reformation, was summoned in 1521, before the Imperial Diet (or Court), presided over by Emperor Charles V., sitting amid a large congregation of Roman Catholic bishops, cardinals, princes, and civil officers, to answer for his doctrine of heresy.

There is a grand Romanesque cathedral at Worms, built 1110 A. D. The building is 423 feet long, 87 feet wide, and the nave 105 feet high. The portals are richly adorned with sculptures upon scriptural subjects. There are splendid towers. The sacred building contains many fine Romanesque sculptures and paintings. The exterior as well as the interior shows all of the Romanesque features in fine detail.

The cathedrals at Mayence, Speyer, and Worms, are acknowledged to be the best examples of the pure Romanesque style.

CATHEDRAL AT WORMS, GERMANY.
(Photo by Soule Art Co.)

XII.

NORMAN ARCHITECTURE.

Origin of Term "Norman Architecture."

Normandy was an ancient province in the north of France. In the year 1066 A. D., William Duke of Normandy, called "William the Conqueror," at the head of a large force of Norman-French invaded England and conquered the country. In the course of time there was great activity in the line of building churches, abbeys and castles. The architecture of these was called "Norman" because the buildings were erected by Norman architects. In France the style was called "Romanesque"; in England, "Norman." The two styles are almost alike. The structural differences are so small they are not noticed except by the eye of an architect.

Examples of Norman Style in England.

There are a number of splendid examples of structures of the Norman (or French Romanesque) style in England, some of these are as follows: Cathedral at Norwich, begun 1096 A. D.; Cathedral (Holy Trinity) at Gloucester; Cathedral at Exeter, Bristol, Waltham and Durham. Many changes have been made in each of these buildings from the original Norman plan. There are numerous examples of grand old Norman castles in England, such as, the Castle of William II., at Colchester; the Tower of London or Castle of William the Conqueror; Castle

at Rochester 1126–39 A. D.; Castle at Dover; Castle at Guilford, tenth century; Castle at Cardiff, erected in eleventh century, and the Castle at Durham, built by William the Conqueror, 1072 A. D. The list is too long to enumerate any further. The Norman Cathedrals, abbeys, and castles of England, constitute a great study in themselves.

DURHAM CASTLE, ENGLAND.
(Photo by Soule Art Co., Boston.)

Cathedral at Durham, England.

The cathedral at Durham, is a good example of the Norman style of architecture. The ground plan of the edifice is a cross 510 feet long, 170 feet across the transepts, 80 feet wide, and 70 feet high. The central tower, 214 feet high, is upheld by four massive cluster piers. The

main entrance is through fine recessed arches ornamented by a variety of pinnacles. The interior effect is grand. One sees, in unbroken view, the great length of the building, its succession of arches, upheld alternately by huge circular piers, its ornamental lattice work, the great windows, the fine vaulting, the great choir screen, and the fine episcopal throne erected 1345–81. The whole vast pile is very imposing in appearance, producing as Dr. Johnson said, "an impression of rocky solidity and indeterminate duration."

Castle at Colchester.

The castle built at Colchester, during the reign of William II. (surnamed "Rufus," 1090–1100 A. D.), is the best example of Norman architecture in castles. It is the largest Norman keep in England. It measures 168 feet by 126 feet. Its walls vary from 11 feet to 30 feet in thickness. It has some herring-bone work of Roman tiling, which is very fine, and vaults and dungeons, which are terrible.

The chapel is used as a Museum. It is full of Roman relics, found in and around Colchester.

Colchester was the place where the first Roman colony was established in England (50 A. D.). Portions of the old Roman wall, nearly two miles in length, can still be seen.

The Tower of London.

The Tower of London covers an area of over twelve acres. It is surrounded by a wall outside of which is a moat. The tower dates from William the Conqueror, who built the White Tower, 1078–1098. The White Tower is a fine Norman structure standing in the center

of the enclosure. It contains a very large collection of antique and medieval curios, mostly Roman. There are twelve towers in the inner ward: *viz.*, Bloody Tower, where the two sons of Edward IV. were murdered by Richard of Gloucester, 1483; Bell Tower, where Elizabeth (then a princess), was imprisoned during the Wyatt rebellion, 1554. Devereux Tower, where Robert Devereux (the Earl of Essex) was imprisoned; "Flint Tower,"

THE TOWER OF LONDON.
(Photo by W. W. Spooner & Co., London. Copyright.)

called "Little Hell," on account of its small dungeons; Bowyer Tower, where the Duke of Clarence, brother of Edward IV., was killed by the Duke of Gloucester (Richard); Brick Tower, where Lady Jane Grey was imprisoned; Jewel Tower, where Queen Anne Bolyn was held a prisoner; Wakefield Tower, where the crown jewels of England are kept; Beauchamp Tower, where the Earl of Warwick was imprisoned, 1397; The Constable Tower, Arrow Tower, and the Salt Tower.

There are six towers of the outer ward: Martin Tower; Byward Tower; St. Thomas' Tower; Cradle Tower; Wall Tower, and Develin Tower. The White Tower is the only one detached; all of the rest were built in with the walls. The great structure was successively a great Norman castle, prison, and palace. Some one has said: "The Tower of London is the glory and the shame of England." The great hoary walls of this old, historic tower — blood-stained and gloomy — stand to-day as grim witnesses of a harsh and cruel age, which blurs history's pages with horrid deeds of infamy and crime.

TOWER OF LONDON — MIDDLE TOWER.

(Photo by Soule Art Co.)

XIII.

GOTHIC ARCHITECTURE.

The Term, "Gothic."

The term "Gothic Architecture" was a name used by the European architects of the fourteenth century, as a reproach, when reference was made to any structures built by the Goths. The Goths were a great warlike tribe of Teutons who dwelt on the borders of the Black Sea and the Danube River. For two centuries, beginning 300 A. D., they overran and finally destroyed the western part of the Roman Empire. After the fall of Rome (476 A. D.) the Goths continued to invade portions of Europe for the six succeeding centuries. About the beginning of the twelfth century they were in all parts of the Central and Southern divisions of the Continent.

Gothic Style of Architecture.

The Gothic style was the outgrowth of the Romanesque. The Gothic architects copied and developed forms of the Romanesque and the structural principles were very much the same. Hamlin claims in "History of Architecture" that there were but two distinctly different structural features in the Gothic which differed from the Byzantine and the Romanesque: 1 "The concentration of strains upon certain fixed points of support. 2 The resistance of thrusts by counter-thrusts and the resultant pressure transmitted by flying half-arches to outside buttresses and pilasters, or, to put in fewer words, that of "balanced thrusts."

Architectural Points in Gothic Style.

The Gothic style has the following notable points: extensive use of pointed arches for windows and doorways and ribbed vaulting for ceilings; large windows and a great use of stained glass; forms of tracery, such as, plate-tracery, above windows and doors, bar-tracery, fan-tracery, wheel-tracery, and flamboyant tracery; vaultings such as net vaults, fan vaults, herring-bone vaults, and star vaults; large number of chapels and spacious choir-lofts; heavy buttresses terminating in pinnacles; great side-windows with profuse adornments; deep jambs and archways filled with sculptures of saints, martyrs, and angels; richly decorated windows of great size under the front gables; elaborate decorations of finials and little spires on towers, roofs, and at the top of windows; exterior decorations of fronts and towers by all sorts of sculptured forms — saints, apostles, grotesque beasts, goblins and devils; elaborate interior decorations of choir lofts, balustrades, pulpits, and wall paneling; the marked feature of a lofty nave and a multiplication of tall slender columns in clusters.

Periodical Division of Gothic Architecture.

The Gothic Period extended from about 1200 A. D., to 1500 A. D. The Gothic style was very popular, and there are a great many examples of it to be found in France, Germany, Spain, England and the Low Countries. The style began to be developed first in France, even earlier than 1200 A. D.

Typical Examples of Gothic Style.

It is difficult to select in each country the perfect types from among so many. We shall specialize as follows:

those of the *French Gothic* — the Cathedral of Rheims; Paris, Chartres, Amiens, and Rouen; of *English Gothic* — the Cathedral of Canterbury, Salisbury, York, Ely, Durham, Lincoln and Gloucester; of *Spanish Gothic* — the Cathedrals of Seville, Valladolid, Salamanca, Leon, Burgos, Valencia, and Barcelona; of *Italian Gothic* — the Cathedrals of Milan, Assisi, Bologna, Venice ("The Era"), St. Maria Novella at Florence, and St. Maria sopra Minerva at Rome, St. Anastasia at Verona, and St. Martin's at Lucca; of *German Gothic* — the Cathedral of Strasburg, Prague, Ulm, Vienna, Cologne, Freiburg, and Ratisbon.

Gothic architecture in Belgium has special examples in St. Gudule, Brussels, the Cathedral at Antwerp, St. Rombant at Malines, the Cathedral of Lourain, St. Wandra at Mons, and St. Jacques at Leige. We shall not enumerate further, the field is too large. It is impossible to give any elaborate description of each of these beautiful Gothic structures. They mark the period and have stood for years as models — many more could be mentioned, but these fix in a measure the outlines of the purely Gothic style of religious edifices in the countries named.

Gothic architecture has many notable examples in secular buildings also, such as cloth Halls, town halls, trade halls, and guild halls, market-houses, mediæval castles, libraries, colleges, as well as manor-houses and the residences of wealthy land-owners in various parts of Europe. There are some fine specimens of Gothic architecture in the United States, among which are the following: St. Patrick's Cathedral, Grace Church, and Trinity Church, New York; the New Old South, and Trinity Church, Boston; All Saints Cathedral, Albany.

FRENCH GOTHIC ARCHITECTURE.

French architects led the way in the development of the architectural features pointed out in the Gothic style. A great many fine Gothic structures were built in France during the twelfth, thirteenth, and fourteenth centuries.

Cathedral of Notre Dame, Paris.

The renowned example of French Gothic architecture, shown here, was begun A. D., 1163, and completed in the

CATHEDRAL OF NOTRE DAME, PARIS.
(Photo by Soule Art Co., Boston.)

thirteenth century. The interior is in the shape of a cross. It has double aisles, a single transept, a nave, thirty-seven chapels, most of which are placed in spaces between the buttresses of the aisles and the choir. There are seventy-five columns supporting the vaulting which is

very high and spanned by Gothic arches. The choir chapels contain many monuments of noted archbishops. The wall enclosing the choir has twenty-three fine marble reliefs representing Scriptural scenes.

Behind the fine altar is the marble statue of Piety by Constou, and to the right and left statues of Louis XIII. and Louis XIV., by the same sculptor. Over the inside aisles is a triforum, or gallery, above the choir, supported by one hundred and eight monolinth columns. The cleristory is lighted by thirty-seven windows, all in the style of Gothic tracery, and filled with scriptural scenes and roses.

The exterior of the cathedral is grand and imposing. There are three wide portals, deeply recessed, in the sides of which are many marble statues of apostles, saints, and ecclesiastics, chiseled by early Gothic sculptors. Above the portals are some fine marble reliefs, the most conspicuous of which is "The Last Judgment." There are twenty-eight niches along the width of the west façade, or front, containing life-size statues of twenty-eight French kings who reigned and died during the construction of the cathedral. Above those sculptures are five statues: Adam and Eve, two angels, and the Virgin Mary; back of those there are great windows with the simple tracery of the Gothic style, while still above is a fine balustrade with splendid arches, over which peep many monstrous gargoyles. The façade is surmounted by two enormous square towers with long pointed windows. In front of this great Cathedral there is a fine equestrian statue of Charlemagne. On one side stands a bronze warrior with a spear; on the other, a warrior with a battle-axe. It is a fine work.

ITALIAN GOTHIC ARCHITECTURE.

Cathedral at Siena.

This magnificent example of Early Gothic Architecture was designed by Giovanni Pisano and built 1284 to

CATHEDRAL AT SIENA.
(Photo by L. Lombarde. Permission.)

1380 A. D. The entrance to this sacred building is very impressive. There is an artistic display of all sorts of surface ornamentation and embellishments which are rich in religious thought, secular history, and symbolism.

A broad marble platform extends the whole length of the front. At each end is a marble column bearing the symbolical She-Wolf of Siena.

The pavement is laid off in parquetry patterns, enclosed by tesselated borders of black and white marbles. There are three deeply recessed portals, richly carved on the side ways in floral designs, and having twisted columns of black and white stone ending with Corinthian capitals. Above the portals are three fine gables, in the tympana of which are sculptured busts. The front wall is covered with distinctive architectural features of the Gothic Period and a profusion of mediæval statuary. There are pinnacled turrets in marble; recessed arcades and galleries, richly embossed and decorated; long Gothic windows with twisted mullions and pictures in glass; angles and panels filled with chiseled leaves and vines; casements and corners in designs of trefoil, quarter-foil and laurel; exquisite inlaid work in colored marbles; triangular borders of conventional flowers and cherubs; delicate etchings, symbolical figures, gargoyles, medallion friezes, buttressed pedestals, and brackets, upon which are many life-size statues of prophets, saints, saintesses, fathers, and angels — a religious company, in silent effigy, yet bearing in their faces the deepest expressions of life and earnestness.

Floor of Cathedral.

There are many marble and bronze statues, frescoes, reliefs, on tombs and in chapels and altars, but the one special thing in which the Siena cathedral outranks all others in the world, is its great interior pavement, pictured in variegated marbles, showing Bible scenes and Old Testament History. The whole floor surface is laid off in designs more beautiful and gorgeous than any

carpet. There are many scenes, like Sacrifice of Isaac, Adam and Eve in the Garden of Eden, Moses on Mount Sinai, Joshua Commanding the Sun to Stand Still, etc., either engraved on white marble and filled with black stucco or made in mosaics and colored stone. The pavement is generally covered by a wooden floor and removed but once a year (the week of "The Feast of the

THE CATHEDRAL OF MARIAE NASCENTI, MILAN.
(Photo by E. Alinari, Florence. Permission.)

Assumption.") This famous church is considered *one of the most* impressive and beautiful creations of Early Italian-Gothic architecture.

The Cathedral at Milan.

The wonderful building pictured here stands in the Piazza del Duomo, near the beautiful Arcade of Victor Emanuel in Milan. It is the finest specimen of Italian

Gothic architecture in Europe, and has been styled "The Eighth Wonder of the World."

Size, Style, Adornments.

In size, it is second to St. Peter's in Rome; in external adornment, without an equal among the ecclesiastical buildings in existence. In style, it is a blending of the Ancient Gothic with the rich ornamentation of the Italian Renaissance. Within, it is a scene of artistic splendor and glory; without, it is a spectacle of architectural skill and grandeur.

Material, Roof, Statues.

The great building is marble, and is so elaborately carved as to present the appearance of lace-work. The roof has ninety-eight Gothic turrets; hundreds of pinnacles, little spires and finials; and a vast number (some estimate six thousand) of life-size and small statues. The Gothic windows, with all of their sacred scenes in stained glass, are exceedingly fine.

Shape, Columns, Floor, Monuments.

The Cathedral is in the shape of a Latin cross, with wide double aisles and a transept flanked with aisles. There are fifty-two marble columns, twelve feet in diameter, supporting the interior. The capitals upon these columns have niches filled with marble statues. There are Gothic arches between columns, and a richly painted vaulting overhead. The floor is of variegated marble, with such elaborate and delicate figures as to resemble a carpet. There are monuments, tombs, bronze statues, life-size silver statues of saints, bas-reliefs, marble etchings, and all sorts of sculptured decorations belonging to the period of Gothic architecture.

Exterior Appearance.

The whole structure glows with art. It is "A thing of beauty" — the finest triumph of the Italian Gothic Period. Of the great number of sacred buildings one sees abroad, rich in costly decorations, grand in architectural finish and magnificent in the details of art, no other one quite compares in some respects to the splendid temple at Milan.

GERMAN GOTHIC ARCHITECTURE.

The Cathedral at Cologne.

The Cathedral at Cologne is considered the grandest work of German Gothic Architecture ever erected. It certainly is an imposing structure, all lines of which may be studied with delight. Its stately form fills the mind with wonder. The exquisite harmony of its parts, the splendor and magnificence of its vast interior, as well as the lofty dignity of its exterior, make a deep impression.

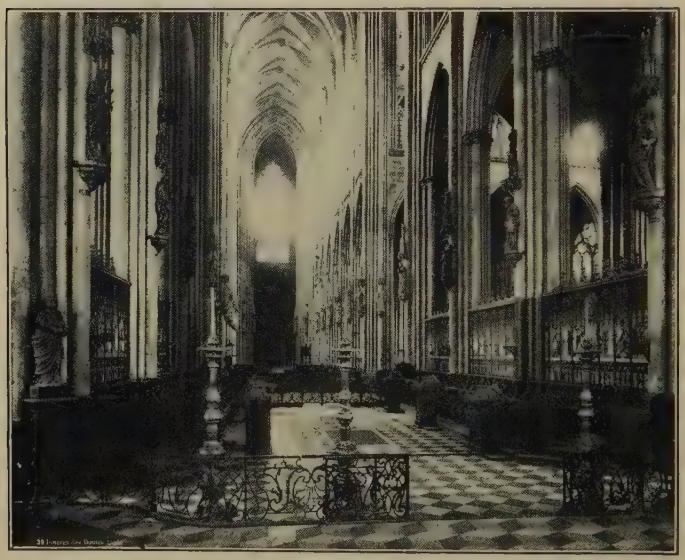
Time in Building.

It was begun A. D. 1248. In 1322, the choir was finished; the nave, in 1388. During a period of many centuries nothing was done and what had been constructed fell into ruins. In 1823, the work of construction was resumed, and in 1880, the cathedral was dedicated with imposing ceremonies.

The Interior.

The marble scene within this great cathedral shows a perfection of detail in Gothic Architecture. There are four aisles and triple-aisled transepts; fifty-six clus-

tered columns; seven beautiful chapels; scores of pointed arches; flying buttresses; ribbed vaults; ancient windows of stained glass; beautiful frescoes and carved stalls. There are exquisite tapestries; splendid tombs; and colossal statues of the Twelve Apostles.



INTERIOR VIEW OF THE CATHEDRAL AT COLOGNE, GERMANY.

The Exterior.

The view of the exterior is superb. Its grandeur overshadows all other things in Cologne. The lofty portal on the west is flanked by two immense towers, with spires over five hundred feet high, in one of which is a bell, weighing thirty tons. The ground plan of the great edifice covers two and one-half acres.

Its Rank and Place as a Gothic Work.

There are many other Gothic structures in Europe, belonging to the different styles, but in the distinctly Gothic features of the interior, none of them have quite so perfect and so elaborate a finish as the Cologne cathedral. Not a single Gothic characteristic has been omitted. It certainly is the most nearly perfect example of Gothic work in the world.

ENGLISH GOTHIC ARCHITECTURE.

Periods of English Gothic Architecture.

English Gothic Architecture has been divided into three periods each of which is specially noted for certain forms of tracery: Early English, when lancet-shaped windows were first used, 1175 to 1280 A. D. Decorative or geometric, when decorations and ornamental constructions began, 1280 to 1380 A. D. Perpendicular Period, 1380 to 1560 A. D. There is a mixture of styles in almost all English Cathedrals. The number of sacred edifices of the dominant Gothic style is too large to attempt a description. We must select only a typical example.

Cathedral at Salisbury.

The Cathedral at Salisbury is a fine typical example of the Early English Gothic style. The ground plan is in the shape of a cross, having two transepts. It is 480 feet long, breadth across longest transept, 230 feet; width of nave and aisles, 99 feet; height of nave, 81 feet. All parts of the building unite in harmony — the central point of which is the spire, 406 feet high, the loftiest in England.

The interior is very impressive. The cathedral is

said to contain as many pillars, doors, and windows as the year contains months, hours and days. It is a grand scene. It has columns all adorned with shafts of Purbeck marble; a nave consisting of ten bays; large windows with stained glass and lancet-shaped windows; a grand display of vaulting; splendid arches; massive cluster columns and a magnificent collection of mausoleums, busts, monuments, and historical statuary. Fergusson says: "The Cathedral at Salisbury is one of the best proportioned, and, at the same time, the most poetic design of the Middle Ages."

SPANISH GOTHIC ARCHITECTURE.

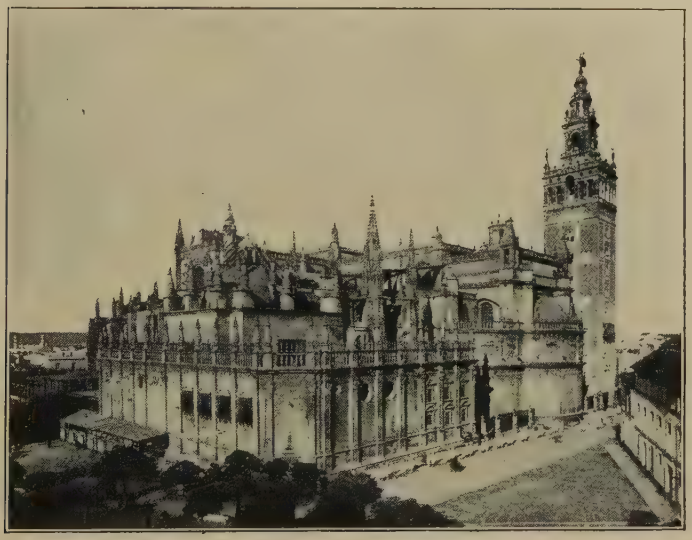
Architects in Spain began to use the Gothic style about 1252 A. D. There are some fine examples of the style. The earliest purely Gothic churches in Spain are the cathedral at Toledo, begun 1227, and that of Burgos, 1230 A. D. There are Gothic cathedrals at Leon (1260 A. D.), at Valencia (1262 A. D.), at Barcelona (1298 A. D.), at Gerona (1416 A. D.). The largest church built during the Middle Ages in Europe is the great cathedral at Seville. It is a grand specimen of the Gothic style.

Cathedral at Seville.

This great religious structure has been the admiration of lovers of art for ages. It is built in the form of a rectangle, 415 feet by 298 feet. It has five aisles, the central one 56 feet wide and the nave 145 feet high.

It was begun in 1403, and completed in 1519 — a period in cathedral building when architects and sculptors developed a lofty religious sentiment, a love for symbolism, shrines, and statuary.

The interior of this great structure is filled with rich and artistic work. The eye in its sweep beholds many massive cluster-columns, spanned by Gothic arches of great height; a lofty area of fine vaulting; scores of windows with exquisite tracery, all filled with a large number of religious scenes in stained glass; wide double aisles with lateral chapels; a beautiful "trascoro,"



CATHEDRAL AT SEVILLE, SPAIN.
(Photo by Beauchy.)

adorned with masterpieces of sculpture, and the fine "respaldos" covered with symbolic figures, statues, statuettes, medallions, reliefs, and a great variety of ornamental designs, carved in alabaster.

The Gothic Retalbo of the High Altar consists of forty-four compartments, each one of which is filled with fine groups of statuary in relief, showing Old Testament and New Testament figures. In point of

size, variety of illustration, ornamentation and general excellence in fine deatils of decorative sculpture, this beautiful altar is unsurpassed by any other in the whole of Europe.

GOTHIC RETALBO, CATHEDRAL AT SEVILLE.
(Photo by Beauchy.)

"El Tenebrario." — Sculptures.

Between the choir and the high altar is the famous "El Tenebrario" (or bronze candlestick). It is twenty-five feet high, was made in 1562, and is considered one of the finest specimens of bronze work of the sixteenth

century. There are places for thirteen tall candles, one for each of the Twelve Apostles and one for the Virgin Mary. When the "Miserere" is sung, all of the candles are extinguished, but the last one.

The sculptured scenes in this old Gothic edifice are the productions of Spain's greatest masters in art. They

MAYOR'S ALTAR — CATHEDRAL AT SEVILLE.
(Photo by Beauchy.)

represent in lines of great beauty, a long series of religious events, as well as show forth, in perfection, a great number of statues and statuettes of historical characters, saints, heroes and martyrs. Almost everything connected with "The Story of the Cross" is either symbolized or accurately shown within its walls.

Cathedral at Burgos.

The Cathedral at Burgos is another magnificent specimen of the Spanish Gothic style. It is graceful, and elegant in outline, rich and strong in ornamentation, harmonious and beautiful in proportion and fine in all the nice details of finish. In fact, it is both outside and inside a work of surpassingly beautiful architecture.

CATHEDRAL AT BURGOS, SPAIN.

It has massive open-worked towers (three hundred feet high), great pointed windows ornamented with Gothic tracery and Bible scenes. It has delicate lace-worked turrets and a principal facade which is a marvel of stone lace-work. The splendid cathedral was begun between the years of 1220 and 1230. It has splendid arches, stately columns and beautiful portals.

"THE CRUCERO."

The great Crucero (or lantern of the dome) was called by King Charles V., "The gem of the cathedral." Philip II. said: "It is fit to have been the handiwork of the angels." The lofty spire was not completed until 1587. One can study with delight its cluster of minarets, filled with fine historical sculptures, its open galleries and Gothic windows, its finials, surmounted with life-size marble statues of sacred characters, and all of the beautiful designs so artistically wrought in the clear Ontoria stone. When seen from a distance, the forest of spires which rise from the towers against the sky present a most imposing appearance.

"THE CONSTABLE." — CHAPELS.

There are fifteen chapels, differing in style and finish in the cathedral. The most gorgeous one of these is "The Chapel of the Constable." This has an interesting history. In the thirteenth century, when "knighthood was in its flower," the constable was an officer who had charge of all matters pertaining to the various feats of arms which were performed on horseback, such as tilts and tournaments. He was a most important person in the days of chivalry, when helmeted knights fought against each other in the lists.

CHAPEL OF THE CONSTABLE.

The chapel was founded, as the inscription shows, by Don Pedro Fernandez de Velasco. It is built in the Florid Gothic style, with here and there something of the Saracenic style of ornament. The entrance is formed by a fine semi-circular archway, wrought in "Cresteria" or Niche Work.

The chapel has fourteen windows filled with scenes

representing "The Passion of our Saviour." On the walls are four large marble escutcheons, showing the arms of the whole family of Velascos. By the altar are tombs of the constables and founders of the chapel. Upon the tombs are many fine marble statues of distinguished personages. Two masterpieces of sculpture

GOTHIC ALTAR — CHAPEL OF THE CONSTABLE, CATHEDRAL AT BURGOS.
(Photo by Vadillo.)

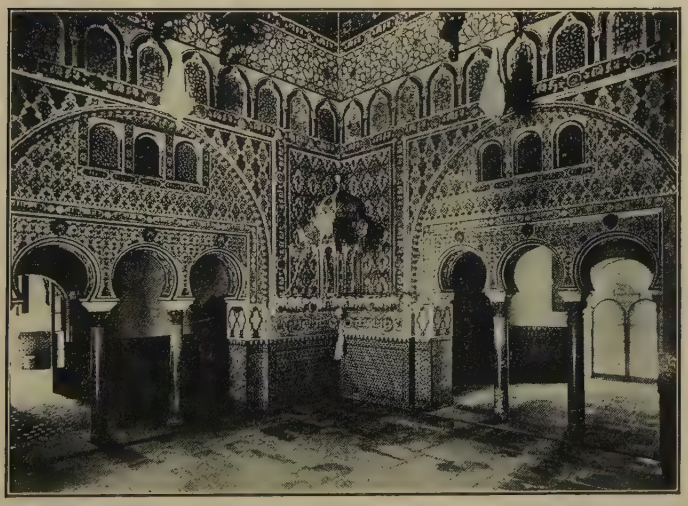
are those of the constable, who died in 1492, and that of his wife. He was the Viceroy of Castile. Every detail of his features, expression, form and armor are wonderfully chiseled.

The statue of his wife, lying on richly embroidered cushions on the tomb, is exceedingly well done. So

natural is her look and position, that she seems almost alive and simply reclining on a couch. She holds her gloves in her hand, while her faithful lap-dog is at her feet.

Enumeration of Contents.

The cathedral contains seven stairways, richly decorated; one hundred and twelve windows full of all forms of stained glass-work; thirty-six railings, richly carved; sixty tombs, covered with fine sculptures; seven organs; nine baptismal fonts; ten confessionals; forty-four altars; one hundred and forty-four pictures, and over one hundred full-size marble statues. The principal architect of the splendid work is not known.



THE ALCAZAR, HALL OF AMBASSADORS, SEVILLE.

(Photo by Soule Art Co.)

XIV.

ITALIAN RENAISSANCE ARCHITECTURE.

Meaning of "Renaissance."

The term "Renaissance" literally means the revival of what has lain extinct or dormant, a re-birth. The "revival in art" came in the fifteenth century. Every province of knowledge was explored: Philology; Religion; Politics; the whole circle of Physical Science and Art. There arose in Italy a new style of architecture, which gradually superseded the Gothic. This new and beautiful style of architectural work came from out the spirit of the age, and the intellectual movement which characterized the century. The Renaissance Period has been divided into three parts: Early Renaissance, 1420–1500; High Renaissance, 1500–1600; Baroque (or Decline), 1600–1800 A. D.

Architectural Details.

Some details of Renaissance Architecture may be noted, such as, imitations of Greek entablature; copies of forms of Roman gables; exceedingly rich and profuse ceiling decorations; fine wall paintings; huge hemispheric domes; double domes and cupolas; wonderfully carved doors; splendid stucco-work in relief; paneled and carved pilasters; arched cornices; door-frames and window-frames, exquisitely carved; decorated friezes; fanciful designs on capitals, facades, smooth and simple (depend-

ing for adornment mainly upon the openings); rich mouldings, carved with fanciful figures, griffins, genii, masks, scrolls and wreaths; pilasters filled with delicate arabesques, imperial profiles, historical medallions, polished marbles, golden foliage, and carved pedestals.

"THE DUOMO"—CATHEDRAL, BELL TOWER, BAPTISTRY—FLORENCE.
(Photo by E. Alinari. Permission.)

"The Duomo."

The magnificent group of structures shown here consist of the Cathedral of Santa Maria del Fiore, the Campanile, or Bell Tower, and the Baptistry — all of which are on a square in Florence commonly called, "The Duomo." The cathedral was built 1294–1474 A. D. The architects were Arnolfo, Giotto, Talenti,

Brunelleschi, Gaddi, and Orcagna. The building is 556 feet long, 342 feet wide at the transepts, and the nave 154 feet high. The walls are of white and colored marbles.

Exterior of the Cathedral.

The exterior is an incrustation of beautiful sculptures, wrought in variegated marbles. There are three facades, or fronts, all of which are rich in sacred figures, showy decorations and symbolism. The front, represented before us, contains three grand doorways, above each of which are pictured scenes in the tympanums, or almond-shaped spaces above. The one in the centre is called "The Porta della Mandorla." The mosaic directly above is "The Annunciation," by Ghirlandajo. The statues to the immediate right and left are respectively: Santa Reparata and San Zenobia. Farther up in the pointed space is the bas-relief of the Glorified Madonna, by Nanni di Banco. Across the whole front runs a series of fine Gothic niches, like recessed windows, filled with life-size statues, representing the Twelve Apostles, and the Virgin Mary. This work is simply exquisite. Between the line of saints and another row consisting of busts of the early fathers, is the fine rose window by Sarrocchi, surrounded by holy fathers and patriarchs, whilst in the uppermost tympanum is a splendid bust of the "Patron Saint of Florence." The whole front glows in its beauty. It is one of the most fascinating scenes of sculpture one sees abroad.

Interior of the Cathedral.

The interior of the cathedral is vast, sombre-hued, and imposing. There is a view of a lofty nave, spacious galleries, ample vaulting, fine arches, beautiful altars,

and a display of antique windows full of gorgeous colors and blessed forms. The floor is of marble mosaics. Gleaming down through the massive double dome is a flood of light reflecting a scene of richness and splendor — "a vast concourse of angelic beings and saints as if amid the glories of an overarching heaven." On all sides of the church are monuments, mausoleums, marble statues, busts, reliefs, bronzes, paintings, frescoes, medallions, and frieze decorations.

THE BELL TOWER.

The Campanile, or Bell Tower, stands near the Cathedral. It was begun by Giotto, A. D. 1334; completed by Gaddi, A. D., 1387. It is 292 feet in height and is divided into four stories all of which are formed of many colored marbles and ornamented with artistic skill. The lower part of the first story is adorned with rows of tablets filled with a series of reliefs; the upper part, with sixteen life-size statues. The reliefs are illustrations of the development of man from the creation to the highest period of Greek Science and Art. They are upon the following subjects:

Creation of Adam and Eve; their occupation; Jabel, a cattle herder; Jubal, a harper; Tubal Cain, first artisan; Noah under a grape trellis; early religious worship; house building; pottery, cups, pots, platters, first kind of furniture; subduing a horse by riding; weaving — woman at the loom; law coming down from Mt. Sinai; emigration; navigation; horse drawing chariot; architecture; mythical figures of the "Seven Liberal Arts," with the statues of the first great teachers in each branch beneath, arranged as follows: Sculpture, Phidias; Painting, Apelles; Grammar, Priscan; Poetry, Orpheus; Philosophy, Plato; Astronomy, Ptolemy; Music, Tubal Cain.

Above these are figures representing the "Seven Cardinal Virtues:" Faith; Hope; Prudence; Fortitude; Justice; Temperance, and Charity; the "Seven Beatitudes"; and the "Seven Sacraments."

The second, third, and fourth stories are separated by ornamental bands and pierced by Italian Gothic Windows. The tower is a wonderful creation. Ruskin says: "It is a model and a mirror of architecture."

Other notable examples of the Early Renaissance Period are: Santa Croce, San Lorenzo — Florence; San Francesco at Rimini; San Bernardino, Perugia; Santa Maria del Miracoli and S. Zaocaria at Venice.

ST. PETER'S CHURCH, ROME.

The hand that rounded Peter's dome,
And groined the aisles of Christian Rome,
Wrought in sad sincerity.
Himself from God he could not free,
He builded better than he knew,
The conscious stone to beauty grew.

— *Emerson.*

The beauties of High or Advanced Renaissance Architecture reached its climax in St. Peter's Church at Rome.

Location of St. Peter's Church.

The Church of St. Peter's in Rome stands on the old Plaza of Nero, a place where many Christian martyrs were slain, during the reign of that bloody tyrant. Some time in the third century a small basilica was erected at a point in this plaza, where tradition claims St. Peter was murdered and his body buried in a cave. It was not until the pontificate of Pope Nicholas V. (about 1450 A. D.)

that the idea was conceived of erecting, to the honor of the illustrious saint, the splendid edifice, which the world regards as the grandest church ever built. It is, beyond doubt, a glorious triumph in architecture — the chief pride of Rome and the finest type of building during the period of the Renaissance.

Approach to St. Peter's Church.

The approach to St. Peter's is very imposing. It is through a vast court in the shape of an ellipse, the sides being composed of two hundred and eighty-four great marble columns of the Doric Order, standing in four curving rows. Upon the top of this grand colonnade, there are ninety-six colossal statues of saints and early fathers of the Catholic Church.

In the center of this magnificent peristyle stands an Egyptian obelisk, with a fountain on either side. The great building has a double vestibule, upheld by twelve lofty Corinthian columns. There is an equestrian statue of Constantine on one side, and of Charlemagne on the other, while on the top stands a row of colossal statues, representing Christ and the Twelve Apostles. An interior gallery runs over the five portals which give entrance to the church. Over the entrance there is a fine bas-relief: "Christ Giving the Keys to St. Peter." On the inside another (by Giotto): "Our Lord Sustaining Peter on the Waves."

Interior of St. Peter's Church.

The effect of the interior of St. Peter's is almost overwhelming. There is such a sense of its immensity; such superb scenes; such dazzling splendor; such vistas of matchless glory; and such a sweep of unapproachable grandeur in art and architecture, that no one can look

upon it, without becoming lost in wonder, admiration, and delight. Within no other sacred enclosure in the world does one have such a deep feeling of awe and profound respect for the works of man, as shown in Art.

St. Peter's is a shrine of religion. The "Story of the Cross," wrought in marble, is made an object-lesson in history. The great temple has variegated walls, antique

INTERIOR VIEW, ST. PETER'S CHURCH, ROME.
(Photo by Alinari & Cook.)

columns, covered with festoons of wreaths; sculptured flowers, crosses, statuary, medallions, marble angels and cherubs. It has shining pilasters, and golden foliage; a lustrous pavement, rich with mosaics and parquetry patterns, reflecting, like a mirror, its arcades, altars, arches, and decorated vaulting. It has a golden dome, upheld by Corinthian pillars, with intermediate niches, filled with religious statues. These are glorious things

which must be *seen* and their influence *felt* before one can appreciate, to the full measure, the beauty and magnificence of the interior of this wonderful structure.

Popes Buried in St. Peter's Church.

Within vaulted wall-spaces in the church are the remains of sixteen popes of the Roman Catholic Church as follows:

Innocent XII., Sixtus IV., Gregory XIII., Gregory XVI., Paul III., Benedict XIV., Clement XIII., Clement X., Urban VIII., Leo XII., Alexander VIII., Alexander VII., Innocent XI., Leo XI., Pius VIII., Pius VII.

Sculpture in St. Peter's Church.

In front of, over, and on either side of the vaults are some of the finest pieces of marble statuary in the world. Some of these great works of sculpture are: The Genius of Death with inverted torch (Canova); Science and Charity (Pietro Bacci); Religion and Power (Rusconi); Leo I. Threatening Attila with Vengeance if he destroys Rome (Algardi); The Abjuration of Henry IV. of France (Algardi); History, Time, Power, and Wisdom (Thorwaldsen); Christ Blessing Pius VIII., Peter and Paul on either side (Tenerani); Justice, Prudence, Charity, and Truth Surrounding the Kneeling Pontiff Alexander VII. (Bernini); Kneeling Statue of Pius VI. (Canova); Mary with Corpse of Christ (M. Angelo). Many forms of allegory and religious symbolism have been wrought in stone at these consecrated places and they glow with all the power of art. The great bronze doors of St. Peter's were made by Antonio Filareto and Simon Donatello in the fifteenth century. The upper panels represent (in relief work) our Saviour, The Virgin Mary, Saints Peter and Paul. There is a

walled-up side door, called "The Porta Santa," which has been opened only on Christmas Eve of the years of jubilee (every twenty-fifth year).

Cost, and Architects of St. Peter's.

St. Peter's was constructed during the reign of twenty-eight popes, embracing a period of one hundred and seventy-six years. The building covers nearly five acres of ground. Its estimated cost (including the palace and museums of the Vatican) is $60,000,000. The ground plan of the church is that of a Greek Cross. The most distinguished architects who helped at different times in the work of building were: San Gallo, Bramante, Vignola, Maderno, Bernini, Ligorio, Fontano, and Michael Angelo.

St. Peter's is a history of the "Church of Rome," wrought in marble, bronze, silver and gold. It is filled with emblems, symbols, and allegorical figures — all pointing to the higher life. It is a great masterpiece of architecture — the most imposing and glorious building for sacred uses in the world.

XV.

GREEK TEMPLE STYLE OF ARCHITECTURE.

Return to Classic Style of Architecture.

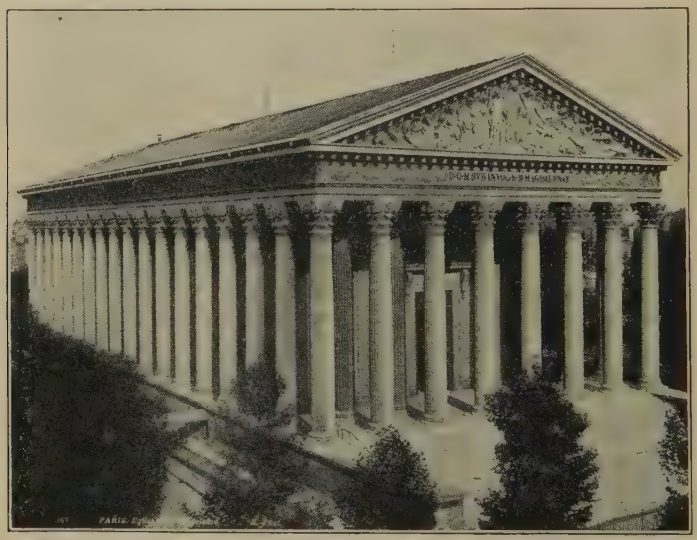
The period of return to the Classic or Greek Temple Style of Architecture began in the seventeenth century and continued through the eighteenth. Architects (particularly in France and Germany) began to tire of the gaudy and showy Renaissance Style, and a strong demand arose for Greek Temple columns and decorations. It soon became a furor. The movement met with instant favor and from all quarters there were calls for plans with Greek pillars, porticoes, friezes, and all sorts of classical frontispieces. What was called a "Classic Revival" commenced.

Examples of "Greek Temple Style."

"The Classic Revival" in France began first among architects who built ecclesiastical structures and then extended to architects who erected other kinds of buildings. "The Greek Temple Style" became very popular in Great Britain and Germany. The British Museum, erected by Robert Smirke, is Greek Style. St. George's Hall, Liverpool, is an imposing example of Greek Architecture, built by Sir John Soane, 1788. The Bank of England, London, designed by Eames, 1838, was one of the earliest specimens of the style.

Architects in Germany vied with each other in creat-

ing the best "Greek Temple Style" buildings. The old Museum in Berlin, by Schinkel, showing a grand portico and eighteen Ionic columns, was decidedly Grecian. The Walhalla at Ratisbonn, designed by Klenze, 1830, is a perfect copy of the Parthenon at Athens. The Glyptothek at Munich, by Klenze, has the Greek features of an Ionic portico.



CHURCH OF THE MADELEINE — PARIS.
(Photo by Neurdein Brothers, Paris. Copyright.)

The Madeleine.

A notable example of the "Greek Temple Style" is the famous Church of the Madeleine in Paris. The Madeleine is a late Roman copy of the Greek Temple Style. The interior is somewhat Byzantine in plan. It is a noble structure. It was begun by Couture, 1777, and completed by Huve, 1842. The tympanum of the

front is filled with magnificent sculptures representing "Christ Judging the World." The niches in the colonnade contain statues of saints. The structure is "Greek Peripteral" in style. It has Corinthian columns on its sides and ends. The great bronze doors are decorated with panels in bas-relief showing the delivery of the Ten Commandments.

On the altar is the "Assumption of Mary Magdalene," in marble, by Marochetti. The fresco paintings are very fine. They are by Zeigler and the subject is "The Progress of Christianity." The portraits are those of notable men and women of all ages. Christ is the central figure. Some critics of architecture claim that the interior of the Madeleine has something of the Byzantine Style in its three pendant domes in the vaulting of the nave. The building is 330 feet by 130 feet, and 100 feet high. It is the most beautiful edifice in Paris.

The Pantheon at Paris.

Over the spot where St. Genevieve was buried, 512 A. D., there stands one of the notable buildings in Paris — The Pantheon, originally called "The Church of St. Genevieve." The imposing structure was built 1713–81, by Soufflot. The ground-plan is a Greek cross, measuring 362 feet by 267 feet. It has a dome 265 feet high, around the drum of which is a fine peristyle of columns. The splendid portico has thirty-two Corinthian columns, eighty-one feet high. In 1793, "The Commune" converted it into a "Memorial Temple." The interior of the Pantheon is filled with splendid works of art. There are four large allegorical frescoes representing, respectively: Patriotism, Justice, Death, and Glory. One of these shows the "Goddess of Victory" crowning Napoleon I. The paintings by Lenepveu,

representing scenes in the career of Joan of Arc are greatly admired. There are statues of Mirabeau, Lafayette, Fenelon, Manuel, Carnot, Napoleon, Voltaire, Rousseau, Berthollet, La Place, David, Cuvier, Bichat and Soldiers of the Empire and of the Republic.

THE PANTHEON AT PARIS.
(Photo by Neurdein Brothers. Permission.)

Over the main entrance there is a very large collection of sculptured figures in high relief. The subject of this is: "France Distributing Wreaths to Her Illustrious Children." Underneath the sculptures are the words: "*Aux Grands Hommes la patrie reconnaissante.*" The translation is: "To great men, the country is grateful."

XVI.

AMERICAN ARCHITECTURE.

COLONIAL PERIOD.

Early Colonial Conditions.

The brave colonists that came from Europe to settle in the wilds of the New World in the seventeenth century, had to face and contend with many difficulties. Their life was a struggle. First of all, they had to use laborious efforts to make an unbroken soil, in an uncivilized country, yield them the actual needs of subsistence. They had to protect themselves from savage Indians, ferocious animals, and the lower forms of brute nature. They found nothing made or prepared, everything had to be raised, and everything had to be built. The settlers had to struggle, amidst all their adverse surroundings in a rigorous climate, to maintain themselves, and to establish all of the institutions in their new colonial state. They were the pioneers of American civilization. Their lives were full of hardships and sacrifice.

Early Colonial Architecture.

The early colonists were so busy, for years, in adjusting the unorganized state of things around them that they had but little time to give to any extended forms of architecture. What they built was of the most simple

and primitive kind. All sorts of early colonial houses had to be constructed hurriedly, in the easiest way, and of material nearest at hand. That material was principally obtained by felling trees in the forest, cutting the logs into required lengths and building dwelling houses, school-houses, churches, store-buildings, town houses and stockades. The building style of the earliest colonies may be called the "Log-house Style of Architecture." In course of time the most important public buildings, as well as some private houses were built of lumber and of brick—those materials being imported from Europe.

Colonial Church Architecture.

In the earlier years of the eighteenth century, Colonial architects (or "house builders" as they were called) began to build "meeting houses" on more advanced styles of architecture. In most cases the designs were copied from models made by Wren and Gibbs of London. The most conspicuous features in the construction of the churches were their towers and steeples.

Christ Church, Boston.

The corner-stone of this church was laid in 1723, by Rev. Samuel Myles. The walls are very thick and substantial; the brick tower has four stories. On one side is a tablet which reads: "The original lanterns of Paul Revere displayed in the steeple of this church April 18, 1775, warned the country of the march of the British troops to Lexington and Concord." General Gage witnessed the battle of Bunker Hill from this church steeple. The interior of the building is very plain and of the old-time style. The clock has been in its place since 1746. There is a bust of Washington by Houdon, a silver Com-

munion set presented by George II., in 1733, and on the pulpit a copy of an ancient "Vinegar Bible."*

Another colonial church which is filled with historic interest is "The Sanctuary of Freedom," the place where "town-meetings" were held "to kindle the flame that fired the Revolution."

OLD SOUTH CHURCH. BOSTON.
(Photo by Soule Art Co.)

"OLD SOUTH CHURCH," BOSTON.

The architecture of this church is about the same as the one preceding it. A tablet in the front yard reads: "Old South Church gathered 1669. First house built

*Published by Clarendon Press, Oxford, 1717. It has over Luke xx. "Parable of 'the Vinegar'" (for Vineyard).

INDEPENDENCE HALL, PHILADELPHIA.
Interior View of "Independence Chamber."
(Photo by R. Newell & Son. Permission.)

1670. This house erected 1729. Desecrated by British troops 1775–76." December 16, 1773, about ninety citizens of Boston, disguised as Indians, met at the "Old South" and went down to Griffin's Wharf, where three British ships lay moored, and cast 342 chests of tea into the water. The "Old South" is now a loan museum, full of Revolutionary and other relics, Colonial furniture and portraits of Colonial times. The building so rich in both sacred and political memories is preserved by an organization named "Old South Preservation Committee," composed of twenty-five Boston ladies. Mrs. Mary Hemenway was the leading spirit. This noble lady arranged for the purchase of the church and lot to save it forever from the grasp of "Commercialism."

Colonial State House of Pennsylvania.

Another Colonial building, sacred to all Americans, because it is the birthplace of our national liberty, is "Independence Hall" in Philadelphia. It was built in 1729–1735, by the Province of Pennsylvania, as a "Colonial State House" (or Capitol). It belongs to the architecture of the "Georgian Era" with some decorations of "Queen Anne Style." The total cost of the structure was $28,000.00. Andrew Hamilton was the chief architect; Edmund Wooley, "head carpenter"; John Harrison, foreman of the joiner work; Thomas Boude, head brick mason; William Holland, marble workman; and Thomas Ker, head plasterer. The most important object in the building is "The Liberty Bell," whose tones first proclaimed the legal formation of the United States of America. It has on it, this motto: "Proclaim Liberty throughout all the land unto all the inhabitants thereof."

"Independence Hall" is the greatest national me-

morial in our country. It has hallowed associations. Here the "Declaration of Independence" was debated, paragraph by paragraph, by the Continental Congress; then it was adopted and announced July 4, 1776. It was first publicly read by John Nixon to a vast concourse of people in "Independence Square."

Interior of Independence Hall.

The interior of the building is filled with historical relics which are under control of "The Sons of the American Revolution." The East Room (shown in the picture) is the one where the members of the Second Continental Congress signed that immortal document — "The Declaration of Independence." It contains the chair which was occupied by President John Hancock; a frame, back of the desk, containing a copy of the declaration; the table at which the members signed their names; the chandelier which was used in the evening session; and the ink stand used on the President's desk. The walls have on them portraits of forty-six of the fifty-six signers of the declaration, besides twenty distinguished soldiers of the American army and other prominent persons, both American and European. It is a holy sanctuary, where upon a sacred altar, devoted patriots lit the torch of American liberty.

Old State House, Boston.

Another example of restored architecture of the Colonial Period, and a building of great historical interest, is the Old State House in Boston. It was built in 1748. It was designed by Charles Bulfinch. It is of simple outline — a rectangle with a projecting centre and crowned by a hemispheric dome. It served as a Town House, Court House, State House, and City Hall. The place

was the scene of many stirring events during the period immediately preceding the Revolution. The restored rooms contain a rare collection of relics, belonging to the Colonial Period, such as, historical manuscripts; quaint paintings, engravings and prints; and furniture once used

OLD STATE HOUSE, BOSTON.
(Photo by Soule Art Co.)

by the Royal Governors. Everything in the place points backward to life during the Colonial time. A lion and a unicorn of the Royal Arms adorn the front.

FANEUIL HALL, BOSTON.

This is another restored building of the Colonial time. It is called "The Cradle of American Liberty." Most

of the "Town-meetings," which encouraged the rebellion against Great Britain, were held there. It was there that such patriots as James Otis and Samuel Adams spoke upon the question of "Justifiable Resistance to the British Crown." The original hall was built by Peter

FANEUIL HALL, BOSTON.
(Photo by Soule Art Co.)

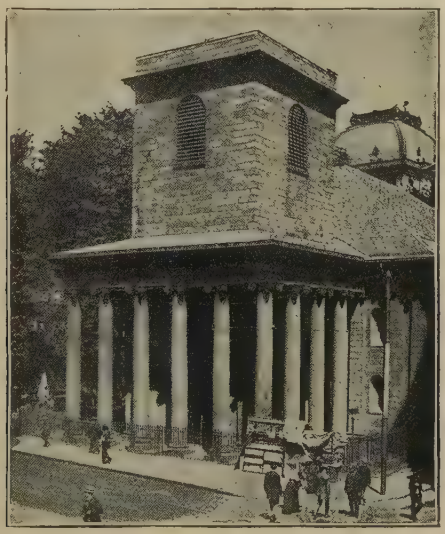
Faneuil and given to Boston in 1742. The architect was Charles Bulfinch. The building is of no importance from an architectural standpoint. It is enshrined in memory from its associations with the cause of American liberty. The building is situated in Faneuil Hall Square.*

*Since 1742, the street floor of the building has been used as a market. By a provision in the City Charter of Boston, Faneuil Hall cannot be rented or leased. It is opened to the public only by special permission from a certain board of managers.

King's Chapel, Boston.

King's Chapel, corner School and Tremont Street, Boston, is an interesting Colonial building, dating from 1754.

It was built by Peter Harrison. It is a low solid structure of dark stone with a heavy square tower and a front portico, upheld by twelve Ionic columns. It was the



KING'S CHAPEL, BOSTON.
(Photo by Soule Art Co.)

official church of the royal governors. The interior shows rows of columns supporting the ceiling, an antique pulpit and reading desk. Wall tablets and sculptured monuments line the walls. The governor's pew was elevated two steps above the others, hung with crimson curtains, and surmounted by the royal crown. Along the walls there were displayed coats-of-arms of the different royal

governors. The church organization was formed in 1686, by Edward Randolph and Rev. Robert Ratcliffe, who came from England to establish the Church of England in the Massachusetts Colony.

Christ Church, Philadelphia.

Christ Church, Philadelphia, is a fine example of Colonial church architecture, and a building of historical importance. It was built in 1727. The materials are of moulded brick and brown stone. The double rows of eight arches along the sides have a fine architectural effect. Presidents Washington and Adams worshipped in this church. Benjamin Franklin had a pew in this church for many years, as did John Penn, one of the proprietors of Pennsylvania. The Communion Service was given by Queene Anne in 1708. Many patriots of the Revolution are buried under the floor of the sanctuary in the adjacent cemetery.

AMERICAN ARCHITECTURE AFTER THE REVOLUTION.

After the war of the Revolution was over, and the Constitution for the New Federal Union had been ratified by nine of the states, June 21, 1788, the country was ready for the organization of a new government. In the earlier years of the nineteenth century, architecture along certain lines began to change from the old Colonial into other styles. There was a strong tendency to the classic styles in the erection of all public buildings. Somehow, the style became "fixed" and government buildings for years were built after the "Classic Style." The structures of that period had heavy Grecian columns, and deep porticoes. The Presidential Mansion (commonly called "The White House"), built by Hoban, was one among the first conspicuous examples.

The National Style.

In the construction of the Federal or Government Buildings of our country, there are many certain distinctive features, which dominate so much, that we may classify such buildings as belonging to the "National Style." One, who is accustomed to observing certain lines of work upon government buildings, will always recognize the special and prominent things in their general plan and finish. Certain particular characteristics began to show a marked influence in the construction of all Federal buildings about to the year 1840. The "Classic Revival," which had been raging in Europe previous to that time, began to find advocates among American architects.

Examples of the National Style.

The National Capitol has strong lines of the architecture of the Classic Period all over it. The Treasury Building, Patent Office Building at Washington; the Sub-Treasury and Custom House at New York; Girard College, Philadelphia; the Capitol at Richmond, Virginia; the Capitol at Nashville, Tennessee, are buildings in which the Classic Style predominates. The Army and Navy Building, as well as, the Post-Office Building at Washington, are departures from the old and established styles of architecture for government buildings. The same is true of the beautiful Post Office Building at Buffalo, New York.

The Capitol, Washington, D. C.

The Capitol of the United States, considered as a splendid work of the Modern Period, as a structure in which the Corinthian is the dominant style, as a government building, combining stateliness and beauty, is the

most imposing in the world. It is well worthy of being our National State House. No one can gaze upon its massive and beautiful proportions; its fine terraces; wide avenues of approach and stairways; its grand porticoes, and rows of marble columns; its exterior statuary; bronzes

THE CAPITOL, WASHINGTON, D. C.
(Photo by J. C. Jarvis, Washington.)

and reliefs; and towering above all, its glorious dome, without an inward feeling of joy upon beholding such a majestic creation in architecture.

General Plan of the Capitol.

The noble edifice consists of a central building, made of Virginia sandstone, and two wings, of Massachusetts marble. The central building contains the rotunda and dome, Statuary Hall, the Library, and the

Supreme Court Chamber. In the north wing is the Senate Chamber; in the south, the Hall of Representatives. The rotunda is a vast circular enclosure in the middle of the central building, and almost its entire width. It is nearly 100 feet in diameter and 180 feet to the canopy of the dome. At equal spaces all around its sides rise splendid columns, half sunken in the wall, to a broad entablature upon which is a gallery, having external and internal rows of Corinthian pillars. From the entablature upon those pillars spring huge iron ribs, supporting an attic above, upon which rests the concave portion, the lantern, and the great bronze statue of the Goddess of Liberty.

East Front of the Capitol.

From every point of view the eastern front shows the colossal grandeur, historical adornment and classic finish of the great capitol. Three flights of broad steps lead up from an immense plaza paved with stone, to the marble porticoes of the central building and those of the northern and southern wings. The central portico is one hundred sixty feet wide. The roof is upheld by twenty-four Corinthian columns. The front pediment over the steps has an eighty-foot span, and is filled with a colossal group of statues in allegory, representing the "Genius of America." Two massive buttresses extend outward from the floor of the portico, and upon each buttress is a group of marble statuary. One group is entitled "The Discovery of America"; the other, "The First Settlement of America." In the middle of the plaza and fronting the capitol is a seated statue of Washington, shown in the kind of costume once worn by rulers of Imperial Rome. "The Father of our Country" is represented as making a gesture of warning or advice to

the people. The pediment above the portico of the southern wing contains no statuary, but the one above the portico of the northern wing has an immense group made by Crawford, and named "The Progress of America." The main entrance from the central portico is by the famous Rogers' Bronze Doors. (A full description of these may be found in Part Third.)

West Front of the Capitol.

The architectural glories and vast proportions of the capitol are by no means lost by a view from the western front. The approach to the eastern front is upon level ground, while that to the western is up a long sloping hill. Standing at the foot of Pennsylvania Avenue and looking upward, the eye takes in its sweep a series of casemated terraces of stone; a broad and high esplanade, the entire length of the building; great flights of steps, parting right and left about a bronze fountain, and leading to a wide portico upheld by ten Corinthian columns.

On the way upward one passes the Garfield monument, the Naval monument, bronze statue of Chief Justice Marshall and the bronze figures around the fountains. The view of the capitol from the west is very impressive. Many think the building looks even more imposing upon its western than upon its eastern front.

Rotunda and Dome of the Capitol.

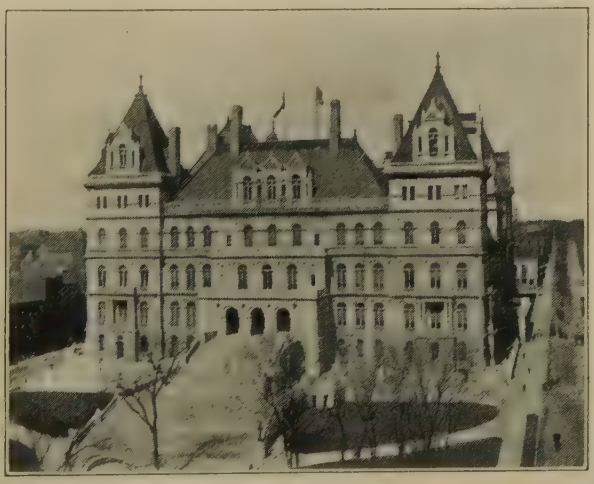
The rotunda and dome of the vast marble pile is the culminating point of its excellence. It glows with color, and is rich in historical and symbolical art.

Our National Capitol is dear in its historical associations; rich in its art adornments; magnificent in its architectural outline; majestic in its towering form; and glorious

in being the central point in our government, from whence reigns that power, alone given "from the people, of the people, and by the people."

ARCHITECTURE OF STATE CAPITOLS.

As there are now forty-eight states, there are the same number of State Capitols. These buildings constitute a most interesting line of architectural study. The new State Capitol of Pennsylvania is a grand work of architecture. Texas has a splendid capitol, as have Illinois, Indiana, Ohio, Colorado, California, and Arkansas.



THE STATE CAPITOL, ALBANY, N. Y.
(Photo by Longhren.)

State Capitol of New York.

America's finest State Capitol is the magnificent structure at Albany, New York. It certainly is a grand and imposing work of architecture — well worthy to be the

seat of the legislative, executive, and civil power of the "Empire State." The total cost of the great building, including land, construction, and furnishings, was twenty-four million dollars.

The stones used in the splendid edifice are: Maine granite; Tennessee marble; Siena marble; gray marble; Mexican onyx; Indiana limestone; gray sandstone; Medina freestone; Bay of Fundy granite; and different qualities of brown stone. It is of the Italian Renaissance in style, blended with a large amount of the Romanesque.

Main Entrance — the Interior.

The main entrance faces the east. The broadest and finest flight of stone steps in the United States lead up to it. The interior of the great capitol is a panorama of surpassing beauty, covering a wide scope and variety of features in the art of building. Triumphs of architectural skill are to be seen everywhere. There are marble walls with high wainscotting, variegated in color — some paneled with onyx and Siena marble — yellow, red, brown, cream color, ivory, sea-water, and olive, and rich combination of stones, varying in hues in the play of sunlight and shade. There are long corridors, spanned by elliptical and semi-circular arches; pilasters, with moulded bases, highly embellished with all sorts of carving, and cluster columns with engraved capitals; corbels, filled with fine sculptures, and friezes carrying form after form from place to place. There are stairways of red sandstone, covered with carvings of rare excellence, and bases and pedestals cut in fine bas-relief work.

Columns — Busts — Art Decorations.

From the ornamented capitals of columns, looking out from flower designs and foliations, are many busts of

distinguished men; some of them are: Washington, John Jay, Sir Henry Hudson, Jackson, De Witt Clinton, Hamilton, Jefferson, Champlain, Columbus, Shakespeare and Homer. There are also figures of Liberty, Literature, Art, Industrial Arts, and the American Indian. In addition to the varied forms of architecture and sculpture (outside of the rooms) there are the large audience chambers, offices, and apartments, filled with beautiful carvings, statuary, fine paintings, chandeliers, and costly furniture. Such, in brief, is the New York Capitol — a vast and glorious work of architecture.*

THE STATE CAPITOL, HARTFORD, CONNECTICUT.
(Photo by W. H. Rau, Philadelphia.)

State Capitol, Hartford, Connecticut.

Another modern building of great architectural beauty is the Capitol at Hartford, Connecticut. This

(*After the publication of this book had begun the great capitol at Albany, N. Y., was destroyed by fire.)

structure is of the Secular Gothic Style, used in the Middle Ages, but now common in public buildings. The material is white marble. There is a majesty, grace and symmetry about this edifice which is fascinating. It stands on a high elevation in Bushnell Park. While not so costly as the New York Capitol, yet, like it, it is rich in sculptured art, legend and history. Over the center tympanum of the east entrance is a fine relief of the celebrated "Charter Oak Tree," while upon the sides are marble statues of Roger Sherman, Thomas Hooker, Jonathan Trumbull, Noah Webster and John Davenport.

The most imposing feature of the exterior is the dome. This is of white marble, duo-decagonal, twelve-sided, in plan, and contains fine columns, arcades and galleries. On each terminal, at angles, are placed two female figures in marble respectively representing: Force, Art, Law, Commerce, Science, and Agriculture. Surmounting the cupola stands a statue of the Genius of Connecticut, holding in one hand a wreath of immortelles; in the other, a wreath of oak leaves.

The interior of the capitol is filled with fine artistic work. There are rows of marble pillars with capitals and arches filled with sculptured forms; many tympana, containing reliefs, showing colonial events; grand stairways of marble; ornaments with marble columns; and an interior view of the galleries and dome, which is exceedingly fine.

State Capitol, Harrisburg, Pennsylvania.

The Capitol at Harrisburg, Pennsylvania, is a noble and imposing work of architecture. It ranks with the greatest of monumental structures in our country. The massive granite pile stands in a wooded park of fifteen acres. In ground plan, the capitol is a main building with two wings — 520 feet in total length, 254 feet in

breadth of center and 212 feet through the wings. There is a magnificent dome rising above the middle part of the edifice. The dome is modeled after that of St. Peter's Church in Rome.

The exterior of the building is of the classic style. The thirty-two capitals of the columns on the two porches, and the mouldings of the entablatures are of the Greek

THE STATE CAPITOL, HARRISBURG, PA.
(Photo from Musser Studio, Harrisburg.)

order. The monoliths weigh thirty-five tons each. There are three great bronze doors on the West front. The main entrance ("The People's Portal") is 12 feet wide, 16 feet high — the largest bronze door in the United States. In the panels are the reliefs: — "Landing of William Penn," "Signing of the Treaty with the In-

dians," "Signing of the Constitution," and other great events in Pennsylvania history. The decorated door posts are filled with the heads of typical men concerned in building the capitol. There are 475 rooms in the capitol. The floor of the rotunda and corridor are filled with tile — rich and rare in decorative work. Over four hundred medallions and tablets show the leading industries and occupations of the people of Pennsylvania. The history of the state is inlaid in tile work on the floors. Artistic beauty and magnificence characterizes the whole structure. It has the three requisites of architectural perfection — form, color, and proportion. It is a palatial State House — a vast accumulation of material which has been raised by master hands to do honor to the fine old "Key Stone State."

Dominant Styles in American Architecture.

American architecture is the outgrowth of all styles with no distinctive style (except the "American Sky-Scraper") which may be called its own. There is such a wide diversity in the character of American buildings, such an inter-blending of types and mixture of historic styles that it is almost impossible, in some cases, to find the dominant features. It is claimed, however, that three ruling styles may be traced in most of our finest buildings and those are: The Greek Temple Style; The Renaissance; and the Buttressed Gothic.

Effect of Modern Methods.

The introduction of modern methods of architecture has revolutionized the appearance of buildings. Methods of truss work have created a new era in roofs, awnings and galleries. "The Post and Girder System" for the

construction of commercial buildings of excessive height, called "Sky-Scrapers"; the iron or steel frame-work inside of the walls; the introduction of elevators; the new application of glass; the utilization of concrete; the construction of buildings absolutely fire-proof; the perfection reached in systems of light, heat, ventilation and plumbing for gas and water; the appliances of electricity; the advent of a finer quality of brick, stone and wood; the use of ornamental tiles and stone trimmings. Beauty, symmetry, and practical utility are some of the points which distinguish modern American buildings from the structures of the old Colonial Period.

Typical Examples in Church Architecture.

Volumes have been written about the vast and costly cathedrals and churches in the cities of Europe. No such marvelous sums of money have been spent in the erection of such sacred buildings in this country, yet, there are some very fine ecclesiastical structures to be seen in American cities. The Cathedral of All Saints, Albany, N. Y., is considered an elegant church. It certainly is a noble specimen of French Gothic Architecture.

St. Patrick's Cathedral, New York, is a grand example of the Decorated Gothic Style. It is the grandest religious edifice yet erected in our country. The Cathedral of St. John the Divine, New York, is a vast and remarkably fine work. When completed it will outrank all other American cathedrals.

The Jewish Tabernacle, New York, is a building of splendid design. St. Mark's, Philadelphia, is a structure that is ornate and beautiful. St. Paul's Episcopal Church, Cleveland, is an edifice that contains much of architectural beauty. The Mormon Temple, Salt Lake City, Utah, is a noble and stately structure, built of Utah

granite. The Tabernacle, in the same square, is one of the most unique and remarkable church buildings in the world. The Church of Our Lady of Perpetual Help, Boston, Mass., is a beautiful, round-arched Gothic building. The "New" Old South Church, Boston, is one of the finest Italian-Gothic structures in our country. The Church of St. James, Philadelphia, is a fine architectural work in Gothic Style. The Cathedral of St. Peter and St. Paul is a building, cruciform in its ground-base and with an interior of the most elaborate Roman-Corinthian Style. A vast number of sacred buildings could be classified, but the foregoing are some of the leading types in the United States at present. One of the latest and grandest works of church architecture in our country is the new Christian Science Temple in Boston.

American Art Galleries and Museums.

In old European cities where the art spirit has been developed for centuries, it is no wonder that so many vast and costly art galleries and museums are to be found. Our country is new, yet its architecture is assuming grand proportions. We are getting to be a nation of builders. Our art is in a state of remarkable development. Our architects and artists visit and work in all the countries and cities of the world. No one can tell the possibilities of American architecture and art. Art museums of highly finished styles of work are to be found in quite a number of our leading cities. Smithsonian Institute, Washington, D. C., is a specimen of the Norman Style. Memorial Hall, Fairmount Park, Philadelphia, is a building of grand and symmetrical design. The Museum of Natural History, New York, is a vast work of high architectural outline. The Museum of Fine

Arts, Boston, is a large classic edifice with fine artistic decorations. Corcoran Art Gallery, Washington, D. C., is a beautiful specimen of the Neo-Greek Style. Its walls are of Georgia marble. Metropolitan Museum of Fine Arts, New York, has a splendid architectural plan and finish. Museum of Art, St. Louis, Mo., is an imposing edifice. Academy of Fine Arts, Philadelphia, is an elegant and well-arranged building. Art Institute, Chicago, is a fine house of the Classic Style. The Art Museum, Cincinnati, is a fine Romanesque building. The Field (Columbian) Museum, Chicago, is a colossal structure having many good architectural features.

American Library Buildings.

We have a great many fine Public Library buildings in our country. The Congressional Library, Washington, D. C., is the finest library building in the world. It is a joy and delight to all that have eyes for the classic, the ornate, the historic, and the beautiful. Its architecture is simply enchanting. Its interior is a vision of beauty. Boston has a Public Library that is a splendid architectural monument. The Chicago Public Library is a gem in architectural design. Philadelphia, St. Louis, Buffalo, Woburn, Massachusetts, and Cleveland, have splendid library buildings. Dayton, Ohio, has a fine library built of blue-gray limestone, trimmed with red sand-stone. Ridgway Library, Philadelphia, is a Grecian structure of granite with Doric columns on its portico. The Carnegie Libraries to be found in many cities are substantial buildings; some of them superior works of architecture. The foregoing are merely types selected from among the great number of library buildings in the United States.

American "Sky-Scrapers."

American architects may justly claim to be world leaders in the construction of steel-frame buildings of great height. The "Sky-Scraper" is wholly American. It is the "*eighth wonder*" of the world. Those lofty structures are made with a steel skeleton inside of them. The beams and columns are so securely riveted together that the building will withstand even severe earthquake shocks. The stone work is laid in cement on the outside of the steel frame work. A great many granite buildings of this pattern, reaching to the very clouds, may be seen along Broadway and other streets in New York. There are many of them over twenty-stories. Prominent among the "Sky-Scrapers" are: the Equitable Life Building; the Havermeyer Building; the Decker Building; the Dakota Flat; the Singer Building; the Metropolitan Building; the Whitehall Building; the Corn Exchange Bank Building; Mutual Life Building; the Atlantic Building; the Sampson Building; the Board of Exchange Building; the Wells Building; the Standard Oil Building; and the Manhattan Life Building. These are some of the sky-scraping architectural wonders of our grand metropolis. L. S. Buffington of Minneapolis obtained the first patent for the construction of tall buildings with steel skeletons.

The "Flat-Iron Building," New York.

The building of "Sky-Scrapers" has been a popular line of architecture in our country for nearly a score of years. Nearly all of our cities have steel-skeleton buildings of lofty height. There is a furor for "Sky-Scrapers" and an ambition among builders to excel each other in the altitude of their structures. New York certainly is building skyward. Conspicuous among all of the tower-

ing "Sky-Scrapers" is the famous "Flat-Iron Building" twenty-six stories high. It is one of the most remarkable office buildings in the world. Its peculiar shape makes it a building that nearly everybody will look up to with wondering eyes. It's right name is the "Fuller Building."

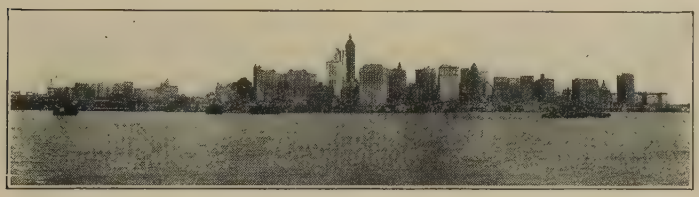
Europeans gaze with astonishment upon the groups and long lines of sky-reaching houses that come into view as an ocean steamer enters New York Bay. "Sky-Scrapers" are found in many other American cities. The Masonic Temple, the Auditorium, and the Schiller Buildings in Chicago, are houses that reach dizzy heights. St. Paul, Minneapolis, Philadelphia, Baltimore, Kansas City, Cleveland, San Francisco, and Brooklyn have steel-skeleton buildings of great height.

"THE FLAT-IRON BUILDING," NEW YORK

A "Sky-Line View" of New York City, as seen from New York Bay, shows the grandest scene of colossal architecture in the whole world. The altitudes and massive proportions of the ranges of "Sky-Scrapers" are amazing. It does not seem possible that buildings could be carried up to such heights as they have. All of the problems of what may be called "High Architecture" have been solved by New York architects. While a score of other American cities have examples of Sky-Scraping structures, New York stands far in the lead in the number and remarkable height of that class of buildings. It would seem that the limit has been reached in the "Singer Building," part of which is over forty stories high, yet, there are plans

BIRD'S EYE VIEW OF NEW YORK CITY.
(Photo, copyright, by Osgood Company. Permission.)

afoot now to carry two other houses to forty-four stories. Such architectural achievements are the marvels of our age.



NEW YORK SKY LINE FROM JERSEY CITY.
(Photo, copyright, by Detroit Publishing Company. Permission.)

American Municipal Buildings.

During the years from 1840 to 1880, a large number of fine Municipal Buildings were erected in our country. The City Hall, Philadelphia, a monumental work in house building, is the grandest town hall in the United States. The City Hall, San Francisco (a building that was badly damaged by the earthquake of 1906), was a magnificent specimen of granite architecture. The City Hall at Cincinnati presents bold lines of architectural thought. Newark, Ohio, has a City Hall of imposing appearance. Auburn, N. Y., has a municipal building of fine design and finish. The Town Hall at Buffalo is a fine house. The City Hall at St. Louis contains many excellent features in architecture. The City Hall in Baltimore is a splendid four-storied marble building of the Renaissance Style. The Chicago City Hall is a Renaissance structure of the highest type of excellence.

These are only selected types from a large number of City Hall buildings in the United States.

RAILROAD BUILDINGS — STATION HOUSES.

We may rightly claim now to have some of the finest and best equipped railway depots in existence. Grand Central Station, New York, is a vast and wonderful work. The Pennsylvania R. R. Station in New York, is a massive building with remarkable lines of architecture. Its junction with the great Hudson River Tunnel System makes it one of the most perfect railway connecting points in our country. South Station, Boston, is a product of high architectural skill. Union Station,

UNION STATION, KANSAS CITY, MO.

St. Louis, is one of the finest depots in the world. Broad Street Station, Philadelphia, is a grand structure. The new Philadelphia and Reading Station is a fine depot building. There is a magnificent railway station house at Portland, Maine. Atlanta, Ga., has a railroad depot of fine architectural design. Dearborn Street Station, Chicago, is a work of splendid architecture. They have recently built a fine depot at New Orleans. The new Union Station at Kansas City is an up-to-date railroad station house. Railroad lines everywhere in the United States are competing with each other in the erection of large and costly

depots. This is an "era of depot building." The houses are of all styles of architecture. In some cases, depots and large hotels are combined in one building. Along the Santa Fé Route through Colorado, New Mexico, Arizona, and California, the "Old Spanish Mission Style" of architecture has been adopted in the building of railroad depots. The "Spanish Mission Depots" are unique; they belong to an architectural class by themselves. There are no other such railway depot buildings in the world. They are built of re-enforced concrete. They have an historical, as well as commercial and architectural importance. Each station is named for some historical character who was famous either in exploration, mission work, or discovery in the great West. There are at present six station houses on the Santa Fé Route, which have the distinctively "Spanish Mission Style of Architecture." These are as follows: "The Castaneda," at Las Vegas, New Mexico; "The Alvarado," at Albuquerque; "The Cardenas," at Trinidad, Colo.; "The Escalante," at Ash Fork, Ariz.; "The Fra Marcos," at Williams; "and "The Sequoyah" at Syracuse. "El Garces," at Needles, Cal., is a fine and costly station house, built after the Colonial Style.

The Hudson Terminal Buildings.

The "Hudson Terminal," located at Courtland, Church, Day, and Fulton Streets, New York City, is the largest office building in the world. The style of the colossal twin buildings is a fine example of the Italian Renaissance. The lower portion of the structure is of polished granite and Indiana lime-stone up to the fourth floor; above that story the construction is of brick and terra cotta. The halls are finished in marble and handsomely decorated.

Underneath the two vast buildings is a basement which we may say is three stories *deep* and covering two whole blocks of space. This great subterranean area is the Terminal station house of the Hudson River Tunnel System operated by the Hudson and Manhattan Railroad Company. This remarkable basement is a most magnificent railroad station, having large waiting rooms,

HUDSON TERMINAL BUILDINGS, NEW YORK CITY.

long avenues of fine stores, splendid corridors, beautiful arches, fine cafes, telegraph stands, telephone booths, newspaper and postcard kiosks, pagodas, ice cream and refreshment parlors, and every convenience possible in a first-class railroad station.

It is a two block section of the city far below the

street level, and is a great focus point of subway and tunnel travel. It is estimated that about half a million people daily pass and repass through this remarkable underground station.

The tunnels connecting New York City with Jersey City consist of two sets of two parallel tubes, each one built of massive iron segments and concrete of enormous strength to resist any pressure. There are layers of earth

SECTIONAL VIEW OF THE UNDERGROUND HUDSON TERMINAL STATION.

and stone from twenty-five to forty feet in thickness between the bed of the Hudson River and the top of the tunnel tubes. Sixteen miles of massive steel and concrete tubes radiate from this great terminal station under the Hudson River. Tube trains of steel cars connect with all lines of travel, either of surface or underground, in the city and with eight great trunk lines running out of the city. The "Hudson Terminal" is, in fact, a city in and

under the two buildings. The permanent population of the place when fully rented is over ten thousand. Vast throngs of people are coming and going through the entrances, and the scene below is one which is unequalled in the world. It is one of the busiest centres in the great metropolis, the most unique and remarkable underground railway station on the globe.

"The Cardenas," at Trinidad, Colo.

"The Cardenas" was named in memory of Don Garcia Lopez de Cardenas, a captain in the army of Francisco Vazquez Coronado, who in 1540 explored the

THE STATION HOUSE, "THE CARDENAS," AT TRINIDAD, COLORADO.

great "American Desert" to the head waters of the Rio Grande, discovered the Pueblo Indians of New Mexico, the Grand Canyon of the Colorado, and penetrated as far north as the 40th degree of North Latitude, spending a winter in the Valley of the Kaw River in Kansas. Cardenas was the first white man to see the Grand Canyon of the Colorado, and was chief field master in the capture of the first one of the "Seven Cities of Cibola."

"The Alvarado," Albuquerque, New Mexico.

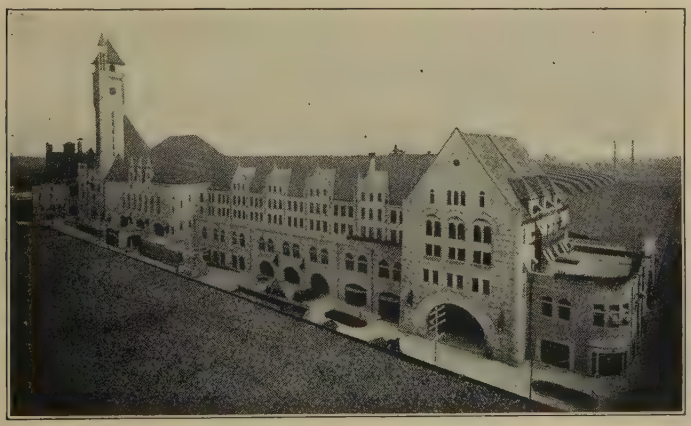
The splendid station house, showing so many fine lines of "Old Spanish Mission Architecture," was named

in honor of Don Hernando, one of the commanders in Coronado's expedition in 1540. Alvarado was the first European to visit the Pueblo Acoma.

STATION HOUSE, "THE ALVARDO," ALBUQUERQUE, NEW MEXICO.
(Santa Fé Route. Photo by Haines Photo Co., Conneaut, Ohio. Permission.)

Union Station, St. Louis, Mo.

The Union Station in St. Louis, Mo., is a building of magnificent architectural design and artistic finish.



UNION STATION, ST. LOUIS, MISSOURI.
(Photo by E. Boehm. Permission.)

It has many fine lines of excellence. It is a great depot. It ranks high among the world's finest railway station houses.

Union Station, Washington, D. C.

The new Union Station at Washington, D. C., is one of the most ornate and imposing buildings of its kind in the world. The main approach to the beautiful structure is through a spacious plaza decorated by a fountain, statuary, and surrounded by a fine balustrade. The building is constructed wholly of white granite. Its dimensions are 760 feet in length, 343 feet in width and from 65 to 120 feet in height. It has a main building and two wings. Greek and Roman Styles of Architecture prevail throughout the edifice. The principal entrance

UNION STATION, WASHINGTON, D. C.
(Photo by Jarvis. Permission.)

to the great station house is under three lofty arches resembling the Arch of Constantine at Rome. The Arches have engaged columns of the Greek Ionic Order and on the architrave are six heroic figures by St. Gaudens representing Archimedes, Ceres, Imagination, Freedom, Thales and Prometheus. The General Waiting Room is a grand enclosure, 130 feet in width, 220 feet in length, 120 feet in height. Some of its architectural features are copies of the interior of the Baths of Diocletian at Rome. One wing of the building has magnificent waiting rooms for

the President of the United States and the Nation's guests. A splendid loggia with a succession of tall arches extends all around the front and sides of the building. The entrances to the wings are through high archways which have classic columns on each side, above which are sculptured eagles. The superb terminal cost $14,000,000. It is a triumph in architecture, a monumental work well worthy of being the depot at our national seat of government.

THE NEW PENNSYLVANIA R. R. TERMINAL STATION IN NEW YORK.

The New Pennsylvania Railroad Station in New York.

The new Pennsylvania Railroad Terminal Station, in New York City, is the largest railroad station in the world. It covers eight acres. It is a fine granite building of correct proportions, and one of the greatest architectural achievements to be found in its class of buildings. It

has every practical convenience known to the railroad world and many new inventions for the benefit of the traveler. The great steel and glass covered concourse or waiting room is the largest room of its kind in existence. The great station house is colossal in size and classic in its arches, vaulting, and Grecian columns. It is a monumental work of architecture.

AMERICAN PUBLIC SCHOOL BUILDINGS

A distinctive line of fine work in which our country stands foremost in the world is in the architectural plan and cost of its Public School Buildings. Space will not

SOLDAN HIGH SCHOOL, ST. LOUIS, MO.
(Photo by Henry Starke, St. Louis. Permission.)

permit of any extended mention of the many splendid edifices erected at public cost in different cities for the instruction of the youth of our land. There are a great many cities that can boast of specially fine architecture

in their school buildings. We shall mention some of them: St. Louis, Kansas City, Minneapolis, Denver, Cleveland, Detroit, Cincinnati, St. Paul, Buffalo, Indianapolis, Nashville, Milwaukee, Toledo, and Des Moines. In New York, Boston, Philadelphia and Chicago, there are many fine specimens of School Architecture.

DE WITT CLINTON HIGH SCHOOL, NEW YORK CITY.

De Witt Clinton High School.

What may be called our National Universities, such as Harvard, Yale, Cornell, Stanford, Columbia University, New York, University of Chicago, Vanderbilt, Ann Arbor, as well as State Normal Schools, form in themselves a vast collection of magnificent architectural structures. The finest and most costly Public High School in the United States is the DeWitt Clinton High School for boys in New York City. The building is seven stories high and contains one hundred twenty rooms. There are

nearly one hundred teachers. There are ten biological laboratories, two large physics laboratories, two large chemistry laboratories, two gymnasiums, five large drawing rooms, an auditorium seating two thousand persons, two large dining halls, seating one thousand persons, twenty shower baths, two thousand steel lockers for bathing suits. The principal has four offices. Internal telephones connect the different departments, and there are three elevators. In the auditorium there is a seven

WESTPORT HIGH SCHOOL, KANSAS CITY, MO.

thousand dollar pipe organ. On one side of the organ is a large painting showing "De Witt Clinton Examining the Erie Canal"; on the other side, "De Witt Clinton Pouring Water from Lake Erie into the Ocean." The pictures cost $3500. The dominant style of architecture in the building is the New Renaissance. The building cost $1,150,000.

Westport High School, Kansas City, Mo., is a building of splendid architectural design and finish.

MISCELLANEOUS BUILDINGS.

American Y. M. C. A. Buildings.

A great many elegant and costly buildings have been built in our cities for the use of the Y. M. C. A., and Y. W. C. A. of the United States. The Y. M. C. A., Building, Philadelphia, is a fine architectural specimen. At New York, Chicago, Rochester, Boston, Buffalo, Auburn, N. Y., and many other places, very fine and imposing structures have been erected as homes for the associations named.

Soldiers' Homes.

No other country in the world has such a number of palatial homes for "old soldiers" as ours. Some of these buildings are gems of architecture. The Soldier's Home, Washington, D. C., is a granite structure of great beauty. There are a number of fine Soldiers' Homes in different parts of the Union: in Kansas, Michigan, California; in fact, in a majority of the states, large and elegant houses have been erected as homes for the war veterans.

Department Store Buildings.

American cities can lay just claim to having, not only from an architectural standpoint, but from a business standpoint as well, the finest department stores in the world. Every modern appliance known in the building art, may be seen in some of the great department store houses of our country. John Wanamaker's store in Philadelphia is a granite structure of vast proportions. It is fourteen stories high. His store building in New York (built by A. T. Stewart) is one of the finest business buildings in the United States. Marshall Field's great department store, Chicago, is another granite building of splendid architectural design.

Bath Houses.

The costliest and largest bath-house in existence was built by Adolph Sutro at San Francisco. It is a great triumph in architecture. Revere Beach, near Boston, has a bath-house that is remarkably fine. The salt bathing pavilion on Great Salt Lake, Utah, is a noble specimen of bath-house buildings.

Hotel Buildings.

There are a great many hotel buildings in our country that should be mentioned among the list of fine works of American Architecture. Hotel Ponce de Leon, St. Augustine, Fla., is a magnificent specimen of Spanish Architecture. The Alcazar and the Cordova, of the same style, are splendid buildings in the same city. All of these houses are built of coquina (a mixture of ocean shells and sand). Hotel Coronado, San Diego, Cal., is a vast structure containing many fine lines in the building art. The Auditorium and the Auditorium Annex, Chicago, are superb structures. The Jefferson, Richmond, Va., is a costly and elegant building. The Palace Hotel (destroyed by fire), San Francisco, was one of the finest hotel buildings in the world. Hotel del Monte at Monterey, Cal., is a magnificent structure. Hotel Astor, New York, is a fine work of architecture, as is the Waldorf Astoria and several others.

DOMESTIC ARCHITECTURE.

Another line of architecture forming a vast line in itself, is that embraced in a review of what may be called Domestic Architecture, and relates to the various styles of buildings seen in American homes. This subject

covers a wide area, as it includes the innumerable list of homes built by the seaside, the lake-shore, bay-front, mountain-side, river-side, country-side, farm-houses, as well as homes on the boulevards, avenues, streets, in suburbs to cities, and in interior towns and villages. There is the widest possible diversity in all this great range of buildings. Perhaps the most marked feature of similarity in American homes, is that seen in the "Colonial Style" so common in various parts of New England, especially at Lexington, Concord, Mass., and in many parts of Connecticut and Virginia. Colonial houses were usually built of wood, with small "stoops," or porches, in front, large rock chimneys at each end of the building, small window-panes and generally had green window-shutters. The wealthier class of early colonists built their houses in a more imposing way, having large porches and columns. This was particularly true of the home of Colonial planters in the South. The "Colonial Style" in the North and the "Southern Plantation Style" in the South were "fixed," and it was many years before any departures began to be made from those standards.

Seaside Homes.

There are a great many palatial seaside homes on both of our ocean shores. Some of these homes are large marble structures with great windows and verandas, some of them richly carved and decorated. These buildings range through almost all styles of architecture — some of them French Chateau Style; some Italian Renaissance; and some a mixture of nearly everything. A stroll along the "Cliff Walk" at Newport, R. I., gives one a fine idea of the point of perfection reached by American architects in building seaside homes. The seaside homes from Asbury Park, N. J., to New York, constitute a line of

magnificent and beautiful structures, perhaps unexcelled in many points of finish and style. The summer homes on Long Island Sound must not be overlooked. Many of them are models of architecture. There are some fine seaside homes at Long Beach, Santa Monica, Venice, Redondo, Coronado Beach, and Ocean Park, Cal.

Riverside Homes.

The "Palisades" of the Hudson River are lined with a great many fine homes built after the finest models of modern architecture. The Thousand Islands, in St. Lawrence River, contain a large number of stylish and beautiful summer homes. Many other localities may be mentioned, where there are rich and costly buildings by the riverside.

Lakeside Homes.

"Gros Point," near Detroit, is a charming settlement of fine lakeside homes, where architects were lavish in their display in styles of buildings. Homes on Lake Geneva, Lake George, and Lake Champlain, have in them a beauty and variety of style which is highly pleasing. The slopes of Lake Erie, Lake Huron, and Lake Ontario have on them a vast number of beautiful homes, rich in architectural design and finish. There are many fine country homes bordering on Lake Oneida, Cayuga, Seneca, and Chautauqua, N. Y.

Suburban Homes.

The suburbs of many American cities contain a great variety of beautiful homes. Here is where the architects' skill in house building has been fully shown. Brookline, Newton and Cambridge, suburbs of Boston, abound in rich and costly homes. Mont Clair, a suburb of Denver,

has some splendid mountain-side homes. Pasadena, a suburb of Los Angeles, abounds in rare and beautiful places. We might go on and enumerate dozens of suburbs where domestic architecture has reached a high degree of excellence.

Boulevards and Streets.

While a wide field exists for architects in every department of domestic architecture, it is upon the great boulevards and residence streets of large cities where some of the finest examples of various styles of architecture may be seen. Such streets as Drexel Boulevard, Chicago; Fifth Avenue, New York; Euclid Avenue, Cleveland; Commonwealth Avenue, Boston; Woodward Avenue, Detroit; Adams Avenue, Los Angeles; Delaware Avenue, Buffalo; Lucas Avenue, St. Louis; and the boulevards of Kansas City, Mo., show all sorts of representative styles in architecture.

The field of domestic architecture, or any other division of the subject of architecture, is so vast and comprehends so much that volumes in place of a few pages would have to be written to go into anything like an exhaustive review of the styles, varieties, and particular features that mark the construction of American homes.

Development of Artistic American Architecture.

The development of really artistic architecture in America, began just after the Philadelphia Centennial, in 1876. We had some good houses before that time, but the true revival of architecture in the United States began at that time. Magnificent buildings began to be built everywhere, old styles were cast aside, and a new era began.

ARCHITECTURE OF WORLD'S FAIR BUILDINGS IN AMERICA.

We have had but three World's Fairs in our country: Philadelphia Centennial, 1786, the Columbian Exposition at Chicago, 1893, and the Louisiana Purchase Exposition at St. Louis, 1903. American Architecture reached what might be called its climax of excellence at the great World's Fairs. Though most of the building material in each of them was of a perishable nature and nearly all of the vast structures erected at those fairs were removed, yet, while they remained, they were the delight of all that love the beautiful in architecture and art.

Columbian Exposition.

The Administration Building at Chicago, was an architectural wonder both in size and construction. The Manufactures and Liberal Arts Building was gigantic. The Palace of Fine Arts was an edifice of rare beauty. The Women's Building was a fine specimen of the style, Italian Renaissance. Its architect was Miss Sophia Hayden of Boston. The Agricultural Building was a great structure in which there were many Corinthian pillars giving the most imposing effect. Machinery Hall was of the style Spanish Renaissance. It was a superb work filled with fine lines of beautiful patterns. The Horticultural Building was a highly decorated edifice of the style, Venetian Renaissance. It had many grand Ionic columns. The Mines and Mining Building was a large and stately house of the Roman Style of Architecture. The Fisheries Building was of the Spanish-Moresque Style. The Transportation Building was a vast structure decidedly elaborate in architectural treatment and rich in matter of detail. The great peristyle on the lake front,

was one of the finest architectural conceptions of the famous "White City." Its forty-eight Corinthian arches, surmounted by "The Columbus Quadriga," all combined to make the peristyle a dream of architecture.

The view of "The Court of Honor" at Chicago was one of enchantment. It was fascinating. It was a vision of fairy land in art. All honor to the master architects that wrought its wondrous beauty.

Louisiana Purchase Exposition.

John Brisbane Walker said: "The Louisiana Purchase Exposition was the world's first really great show of governmental methods and resources." It certainly was a stupendous creation in architecture. Its estimated cost was nearly $40,000,000. In this marvelous age of human achievement, we have become so much accustomed to seeing wonderful works that we do not realize enough the grandeur of their production.

The World's Fair at Chicago, was called "The White City"; the one at St. Louis, "The City Beautiful." The designer-in-chief of "The City Beautiful" was C. L. Masqueray, a Frenchman. There were fifteen hundred seventy-six distinct buildings. One of them, the Transportation Building, covered sixteen acres; while the Palace of Agriculture was built over twenty acres of ground. The general view from the Plaza of St. Louis upon the Festival Hall and Terrace of States, as well as the vast and majestic structures on either side of the great basin, was superb. No one who saw the Palace of Liberal Arts, the Palace of Education, the Palace of Mines and Metallurgy, the Palace of Electricity and Machinery, the Palace of Manufacturers, the United States Government Building, the Palace of Varied Industries, the vistas from

Cascade Hill and the circular colonnade, and all the other magnificent views from different points, can ever forget what a scene of architectural beauty and grandeur they presented.

With American Architecture developed to the glorious standards reached at the Philadelphia Centennial, the Columbian Exposition, the Pan-American Exposition and the Louisiana Purchase Exposition, as well as in the erection of the vast number of magnificent public buildings and "Sky-Scrapers," who will presume to set any metes or bounds to the future achievements of American architects?

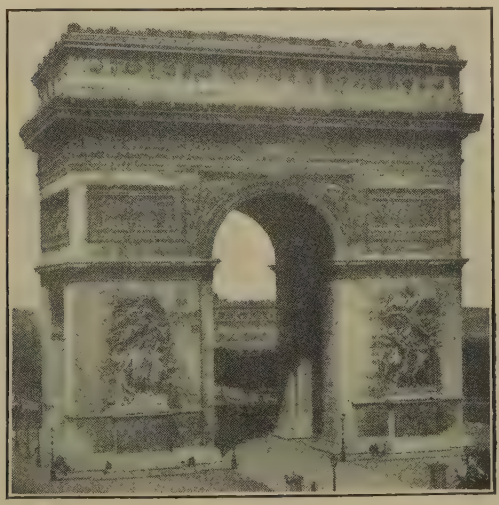
COURT OF HONOR, COLUMBIAN EXPOSITION, CHICAGO.
(Photo by Soule Art Co.)

XVII.

TRIUMPHAL ARCHES.

ARCH OF TRIUMPH, PARIS (CHALGRIN).

The Arch of Triumph, Paris, is the largest triumphal arch in the world. It was begun by Napoleon I., 1806, and completed by Louis Napoleon, 1836. The sculptures



ARCH OF TRIUMPH, PARIS.
(Photo by L. Levy, Paris. Permission.)

were made by Rude, Lenaire, Seurre, Etex, Cortol, Gechter, Pradier, Chaponniere, Feucheres, Jacquot, and Marochetti. The vast arch is 67 feet high, 46 feet wide,

intersected by transversal arches. The whole structure is 160 feet high, 146 feet wide, and 72 feet in depth. On the cornice are thirty shields with names of thirty victories won by Napoleon in war. There are names of 142 other battles on the vaulting. On the front, two large figures of Victory; on the outside and inside sculptured reliefs, showing triumphs of Napoleon.

Simplon Arch, Milan (Cagnola).

The Simplon Road is an Alpine roadway, 25 feet wide, extending over the Alps from Brieg, Switzerland, to Domodossola, Italy, 42 miles. It was constructed by

SIMPLON ARCH, MILAN

Napoleon I., in 1800–1806. In its route the road is carried over 611 bridges, many galleries, cut in mountain sides, and through numerous tunnels. There are over

twenty hotels along the mountain highway. The road marked the course for the International Railroad (completed in 1905), in which there is the Simplon Tunnel $12\frac{1}{4}$ miles long. As a memorial of the work of Napoleon there is a fine triumphal arch of white marble at Milan. There are eight sculptured reliefs on the sides; four groups of bronzes on the top; and statues of four river gods on two of its faces.

WASHINGTON ARCH, NEW YORK CITY.
(Photo by Soule Art Co.)

PILGRIM MONUMENT, PROVINCETOWN, MASS.
(Photo by John R. Smith. Permission.)

XVIII.

MEMORIAL MONUMENTS.

Pilgrim Monument, Provincetown, Mass.

A grand example of historic architecture is the lofty granite memorial at Provincetown, Mass., erected by the Cape Cod Memorial Association to the brave and noble band of Pilgrims who spent a short time at that place before making their landing and settlement at Plymouth, in 1620. The beautiful tower, which is of the Italian Gothic in style, rises 250 feet from the ground and 340 feet from the level of its base. It can be seen for many miles on all sides. The splendid monument was designed by Willard Sears, Boston, and is an exact copy of the Campanile (or Bell Tower) at Siena, Italy. At the top there are gargoyles 8 feet long (like those in the Cathedral of Notre Dame in Paris) projecting out from its four corners. It is a most impressive and beautiful work of architecture. Its symmetrical and stately form, so simple, yet so commanding in appearance, awakens universal admiration.

It is the finest monument in America. There are 164 memorial tablets built into the interior walls that flank its inclined plane. The historic structure serves as a beacon to guide incoming ships at Provincetown Harbor. Its more consecrated and noble purpose is to signalize the faith, heroism, love of liberty, sublime courage and deep devotion of that immortal band of

Pilgrims who made sacred to us the very soil upon which they trod in the New World.

The memorial tablet over the north entrance reads:

"On November 21, 1620, the *Mayflower*, carrying 102 passengers, men, women, and children, cast anchor in this harbor 67 days from Plymouth, England. The same day the 41 adult males in the company had solemnly covenanted and combined themselves together into a civil body politic.

"This body politic established and maintained on this bleak and barren edge of a vast wilderness, a state without a king or noble, a church without a bishop or a priest, a democratic commonwealth, the members of which 'straitly tied to all care of each other's good and of the whole by every one.' With long suffering devotion and sober resolution they illustrated for the first time in history the principles of civil and religious liberty, and the practices of a genuine democracy.

"Therefore the remembrance of them shall be perpetual in the vast republic that has inherited their ideals."

National Monument to the Forefathers, Plymouth, Mass.

On an eminence, overlooking the Bay of Plymouth, where the *Mayflower* landed the brave and noble band of Pilgrims in 1620, there stands a magnificent monumental group of colossal sculpture, erected by the Pilgrim Society of Massachusetts, to the memory of the Pilgrim Fathers. It is the largest and finest work of granite statuary in the world.

The beautiful monument, which is eighty-one feet high, is octagonal in form, with four small and four large faces; from the small faces project four buttresses or wing pedestals. Upon each of the wing pedestals are seated

figures of colossal size, most impressive form and facial expressions: Morality with a firm and consecrated expression looks upward to Heaven as if to invoke the spirit of Religion; she holds the Decalogue in her left, and the scroll of Revelation in her right hand. On one side of her seat is a prophetic figure; on the other, one of the Evangelists. The second seated figure imper-

FOREFATHERS' MONUMENT, PLYMOUTH, MASS.
(Photo by Soule Art Co., Boston, Mass.

sonates Law. The figure has a strong, intellectual face. He is gesticulating with his right hand as if expounding some legal truth. On one side is Justice; on the other, Mercy.

The third seated figure impersonates Education, a

fine conception. On one side is Wisdom, full of years; on the other, Youth, being led by Experience. The fourth figure is Freedom, a noble work. On one side is the impersonation of Peace; on the other, Tyranny.

On the face of the four pedestals, below the seated figures, are the four alto-reliefs in marble: "Departure

MILES STANDISH MONUMENT, SOUTH DUXBURY, MASS.
(Photo copyrighted by A. S. Burbank, Plymouth, Mass. Permission.)

from Delft Haven," "Signing of the Social Compact," "The Landing at Plymouth," and "The First Treaty with the Indians."

Upon the main central pedestal stands the heroic

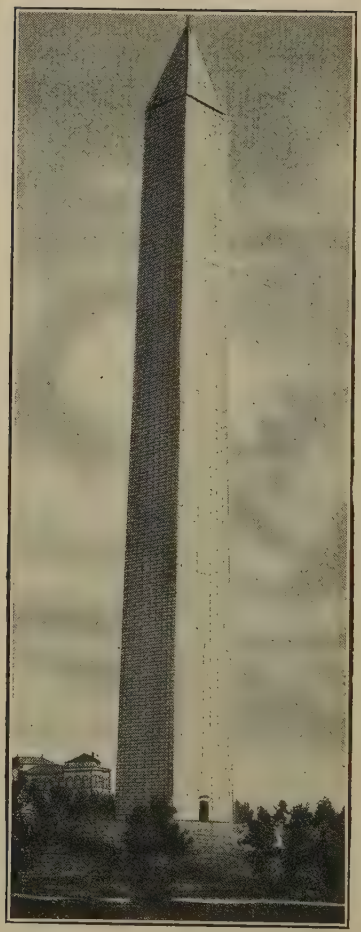
figure of Faith, a most artistic and beautiful impersonation. The majestic statue has one foot resting on a boulder representing "Forefathers' Rock," holding a Bible in her left hand and pointing to heaven with her right as if appealing to God to bless a Commonwealth whose basic principles are Morality, Law, Education, and Freedom.

The group of heroic sculptures in the "Forefathers' Monument" is the grandest creation in stone in our country. On the front panel of the monument is this inscription: "National Monument to the Forefathers. Erected by a grateful people in remembrance of their labors, sacrifices and sufferings for the cause of civil and religious liberty."

MYLES STANDISH MONUMENT, SOUTH DUXBURY, MASS.

In 1899, the Standish Monument Association dedicated the fine granite structure shown in the picture. It is 116 feet high and is surmounted by a statue of Myles Standish 14 feet high. A spiral stairway winds around on the inside to the top. The architect of the work was Alden Frink.

Captain Standish was born 1850. He served in the wars of the Netherlands and came to America in the *Mayflower*, 1620. He was the military commander of the Puritans. He was a brave soldier, but was too timid for a courtier. He was a widower and wanted to marry Priscilla Mullins, a pretty Puritan maiden. He attempted to court her by sending his friend, John Alden, to act as his agent and helper — finally John married Priscilla himself. Longfellow's poem — "Courtship of Myles Standish," has made this affair forever famous. From 1626, until his death, 1666, Captain Standish was the town magistrate at Duxbury.

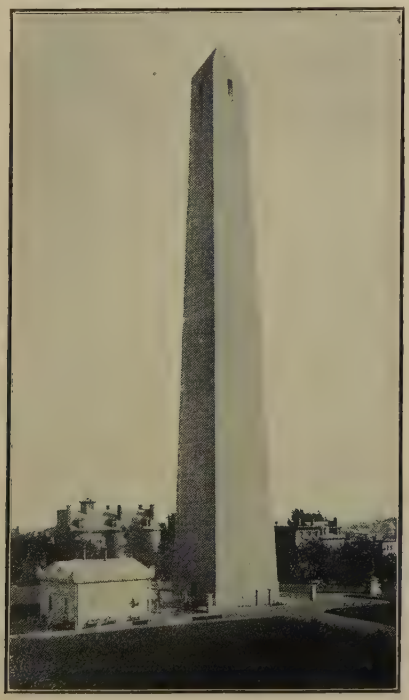


WASHINGTON MONUMENT, WASHINGTON, D. C.

Washington Monument, Washington, D. C.

In its colossal proportions, symmetry of outline, architectural perfection, and towering grandeur the monument in Washington Park, Washington, is considered the most sublime and beautiful stone shaft in the world.

It surpasses all others in height ($555\frac{1}{2}$ feet), as well as in content of stone. It was built from funds raised by the "Washington National Monument Society." The corner stone was laid July 4, 1848, and the finished work dedicated February 21, 1885. The total cost of the monument was $1,300,000. The base of the shaft is fifty-five feet square, the lower walls fifteen feet thick; the foundation rests on a mass of rock one hundred forty-six feet square. Fine stones from forty states and sixteen cities are in the construction. Nine hundred steps wind round the elevator pillars to the top.



BUNKER HILL MONUMENT, CHARLESTOWN, MASS.

GLOSSARY.

A

AARON, 40. The first high priest of the Jews, son of Amram of the tribe of Levi. Aaron was born about 2430 B. C.

ABACUS PLATE, 53. The uppermost member, or part, of a pillar or of a column.

ABOU-ROUASH, 13. A town in Egypt, where the chain of Pyramids begin.

ABYDOS, 21, 23. An ancient city of upper Egypt, six miles west of the Nile. It is now filled with old temple ruins, tombs, etc.

ACCAD, 25. One of the divisions of ancient Syria.

ACHAEANS, 43. According to Grecian Mythology, Xuthus had two sons, Ion and Achæus; the first was the fabulous father of the Ionians; the second, of the Achæans.

ACHILLES, 250, 283. Hero of Homer's Iliad. One of the greatest heroes in Grecian Mythology.

ARCHITRAVE, 49. Part of the entablature that rests on a column; the moulding above the door.

ADIABENES, 73. An eastern tribe, the enemies of Rome.

ÆOLIANS, 43. Mythology is responsible for the statement that Æolus, son of Helen, was the fabulous king of the Æolian Islands and of the Æolians, but was appointed by Zeus as the commander of the winds.

ÆGEAN SEA, 43. Part of the Mediterranean Sea which washes the Eastern shores of Greece and the southern and western coast of Asia Minor.

ÆSCHYLUS, 264. The earliest of dramatic writers in Greece. He wrote sixty-six dramas, only seven of which are now extant. The most popular of the seven is "Prometheus Chained."

AGRA, 106. A city of India, on the Jumma River. The famous Taj Mahal is at Agra.

AGRIPPA, 62. Marcus Vipsanius Agrippa, was a Roman general and statesman. He was the son-in-law of Augustus Cæsar.

AHMED I., 130. One of the greatest of Turkish rulers.

AIX-LA-CHAPELLE, 95. A city of Prussia, thirty-eight miles from Cologne.

AKBAR, 215. "The greatest Asiatic Monarch of modern times." "Akbar" means "very great." His real name was Jalal-ud-Din Muhammad (b. 1542, d. 1605). Emperor of Hindustan.

ALARIC, 426. (Meaning all rich.) He was King of the Visigoths. His period in History was about 394 A. D.

ALBA LONGA, 443. The most ancient town in Latium. It was built on Lake Alban, on a long hill range of white colored rocks.

ALLEGORY, 165. A figurative discourse, a parable.

ALTO-RELIEF, 213. In sculpture, a work is called alto-relief, when the figures, especially the head and limbs, stand out entirely detached from a background. It is also called high relief.

AMELIA BASILICA, 81. This was a court of justice, bordering on the Roman Forum. It was built by Paulus Æmilius, 53 B. C.

AMENOPHEUM, 21. An Egyptian Temple built at Thebes, by Amenophis III., about 1410 B. C. Nothing of it is remaining now but two colossal statues (seated) 53 feet high, each one of which was made of a single block of granite.

AMIENS, 122. An ancient city in Piccardi; during the Franco-Prussian War, 1870, it was captured by the Germans.

AMON-RA, 21. A great Egyptian temple at Karnak, named for an Egyptian deity. The name Amon, or Ammon, means "the mysterious, "the hidden." Amon-Ra means "Amon the Sun" — a Sun divinity.

ANDERSEN, HANS CHRISTIAN, 342. The most gifted poet Denmark has ever produced. He died in 1875.

ANTIGONE, 264. Heroine in the play called "Œdipus," written by Sophocles. In Mythology she was a daughter of Œdipus and Jacasta.

ANTIQUITY OF EGYPT, 11. Egypt is the motherland of the arts and of architecture. With the exception of Hittites, whose history has been discovered recently, Egypt is the oldest nation having a reliable record. Egypt is a land of monumental ruins — far surpassing any other on the globe.

ANTONINUS, 81. A Roman Emperor.

APELLES, 58. Most celebrated painter of Greece.

APOLLO, 59, 227. The god of light, prophecy, music, poetry, the arts, and of the wisdom of the oracles. According to the myth, Apollo was the son of Jupiter (Zeus) and Leto.

APPIAN WAY, 74. A great road leading from Rome, through Capua to Brundusium. It was made of cut stones neatly joined together. It was constructed during the censorship of Appius Claudius and Caius Plautius. It was made a regular roadway, 312 B. C.

APPIUS CLAUDIUS CRASSUS, 69. One of the Roman decemvirs. He was strangled to death in prison, 449 B.C.

AQUEDUCT, 26, 64. An artificial channel for the passage of water. Those of ancient Rome are the most famous in the history of the world. There were sixteen in ancient times, but only four in use now.

ARAB CONQUEST, 99. A conquest which was begun in the seventh century by the Saracens, or Eastern Arabs. The aim was to force the Mohammedan religion upon all the world. The armies of the Saracens subdued, first Arabia, then Syria, Egypt, Asia Minor, and Spain. The great seven days' battle, fought 732 A. D., between the Mohammedans (or Saracens) under Abderahman and the Christians under Karl Martel near Tours, in France, stopped the Arab conquest of Western Europe. Spain was conquered in 713 by the Saracens. In the course of the conquest the Saracens acquired dominion stretching from India to Spain. Spain was freed from Saracenic rule in 1491, when Boabdil, the "Last Moor of Granada," surrendered his army and the city to King Ferdinand and Queen Isabella.

ARABESQUES, 110. A style of ornamentation employing interlacing lines and curves.

ARBELA (now called Erbil), 33. A place in a district of Turkey. Place where a great battle was fought, 331 B. C., between the army of Alexander the Great and that of Darius.

ARCADES, 7. A series of arches; an arched passage, as Arcade Victor Immanuel at Milan, Gallery St. Hubert, Brussels.

ARCADIAN ARTEMIS, 235. Artemis (or Diana) was a Grecian goddess.

ARCOPOLIS, 53. "The upper fortified part or citadel of a Greek City," as that at Athens.

ARGOS, 45. A town in the northeastern part of Greece.

ARGOLIS, 239. A peninsula in Greece,

ARIADNE, 336. According to Grecian Mythology Ariadne was the daughter of King Minos of Crete.

ARTHUR, 300. A British hero of the sixth century. He established the "Order of the Round Table."

ASSUMPTION, THE, 127. A Church festival, August 15. It commemorates the bodily taking up into Heaven of the Blessed Virgin Mary after her death.

ASTRAGAL, 290. A little round moulding at the top or bottom of a column, a moulding encircling a cannon near the muzzle.

ATHENA, 54. A Greek goddess, daughter of Zeus (Jupiter) and Metis — patron deity of Athens.

ATREUS, 45. The oldest town in Greece, named in honor of Atreus, who, according to Mythology, was the son of Pelops and Hippodamia.

ATTUCKS, CRISPUS, 331. A mulatto. He was the first man killed in the Boston Massacre, March 5, 1770. Crispus Attucks Monument stands in Boston Common. On one side is this inscription:

"On that night the foundation of American Independence was laid."

JOHN ADAMS.

"From that moment we may date the severance of the British Empire."

DANIEL WEBSTER.

Names of the victims are on the shaft.

AUGUSTUS CAESAR, 65. Caius Octavius was a nephew of Julius Cæsar, born 63 B. C., died 14 B. C. After the assassination of Julius Cæsar, Octavius (called Augustus Cæsar) became ruler of the Romans.

AURAMAJDA, 35. A Persian deity.

AURELIUS, MARCUS, 75. A most popular Roman Emperor. He was born 121 A. D. He wrote a book entitled "The Meditations of the Emperor Marcus Aurelius Antoninus." It is a book full of wholesome philosophy. It shows the true character of the great Roman.

AVENTINE, 66, 224. One of the famous "Seven Hills of Rome." It derives its name from Aventinus, an Alban King.

AVON, A beautiful stream which flows by Stratford, England, the birthplace and burial place of Shakespeare.

B

BAAL, 24. A Hebrew word meaning "Lord." Baal-Zebul means "Lord of the High House." The name Baal is applied to many different divinities. In Hosea, 2:16, it is applied to Jehovah. The worship of Baal at Tyre was introduced by Ahab.

BABYLON, 28. An ancient city of Chaldea.

BACCHUS, 342. "The god of Wine," in Grecian Mythology.

BALAKLAVA, 390. A seaport in Crimea, six miles from Sebastopol.

BAR-TRACERY, 121. "In bar-tracery the intermediate members are moulded bars of stone in vertical shape, the moulding splitting and dividing to start the branching elements." It is a pattern of decorated window tracery.

BASILICA, 94. A royal hall or portico, a court of law. A structure at first built without a roof.

BASTILE ST. ANTOINE, 304. A stronghold built in Paris by Charles V., in 1369. During the reigns of Louis XIII., XIV., XV., and XVI. it was a political prison. July 14, 1789, a mob attacked the bastile and thus began the French Revolution.

BAS-RELIEF, 213. A term in sculpture which means the showing of the sculptured figures which stand out from a sunken background. It is raised work.

BELVEDERE, 227. The word means "beautiful to see," good view."

A building having a fine prospect. In a part of the Vatican at Rome, called the "Belvedere," there is a statue of Apollo, which is called "Apollo Belvedere."

BOABDIL ABU-ABDULLAH, 442. He was the last Moorish King of Grenada.

BRACKET, 126. An ornamental projection from a wall used for the purpose of supporting a statue, a bust, etc.

BRAURONIAN ARTEMIS, 235. The goddess Artemis (Diana), which was worshipped at Brauron in Attica.

BRUTUS, 403. Marcus Junius Brutus, a Roman politician, born 85 B. C.

BUDDHISTS, 96. Followers of a religious teacher named Gutama Buddah. The Religion of Buddhism is professed in India, Burma, Siam, Nepal, Thibet, China and Japan.

BUTTRESS, 120. A projection in masonry, or in wood, to give strength to a wall or building.

C

CAIN, TUBAL, 143. He was the fifth son of Japheth. He was a slave trader and the first worker in brass.

CALIGULA, 81. A Roman emperor, 37–41 A. D., the youngest son of Germanicus Cæsar. He was a base and vile character, and was assassinated 41 A. D.

CAMPUS MARTIUS, 224. This was a plain at Rome for parades and military displays; also for running of chariots and gymnastic exercises.

CAPITAL, 20. In architecture it means the head of a column or of a pillar, place where laws of a nation, or of a state are made. From the Latin word, caput, the head.

CAPITOLINE HILL, 66. One of the "Seven Hills" of Rome. It was so named from the laborers finding a skull there when digging the foundation for the Temple of Jupiter.

CARACALLA, 71. Marcus Aurelius Antoninus, a Roman emperor (b. 188, d. 217 A. D.) He was originally called Bassianus, but received the name of Caracalla from a favorite Gallic tunic which he introduced into Rome. The Baths of Caracalla were built by this emperor.

CASTOR, 81. According to the myths the heroes Castor and Pollux were the sons of Leda and the Swan. Castor was famous for taming and managing horses; Pollux for his skill as a boxer. They were given divine honors being called "The Dioscuri" (or "Sons of Jove"). Penates were deities chosen by Roman families to protect their homes. The Penates were worshipped as two young warriors with cone-shaped hats on their heads. They rode white horses and were identical with the heroes, Castor and Pollux.

CHARLEMAGNE, 32. Charles the Great, King of the Franks, 768–814 A. D. Roman Emperor 800–814 A. D.

CIRCUS MAXIMUS, 429. This was a great enclosure built by Tarquinius. It was between the Aventine and the Palatine Hills in Rome. It was used for chariots and horse races, athletic sports and wild beast fights. It was large enough to hold 150,000 persons.

CLAUDIAN AQUEDUCT, 69. Tiberius Claudius Drusus Nero Germanicus, the fourth Emperor of Rome (b. 10 B. C., d. 54 A. D.). He constructed the Claudian Aqueduct which carried water to Rome over a distance of 38 miles.

CLUSTER COLUMNS, 133. Columns grouped together — sometimes as many as seven and eight in a group.

COELIAN HILL, 66. One of the "Seven Hills" at Rome. It was named after Cœlius, a Rôman general.

COLCHIS, 245. A province of Ancient Asia, on the eastern coast of Black Sea.

COLONNADE, 38. A row or range of columns.

COLUMNIATION, 46. Classification of Temples. "The employment or system of arrangement of columns in a structure. Grecian and Roman Temples are classified, according to their columniation as follows:

(*a*) By the presence, position and number of porticoes, as pro style, having columns in a front portico only, and across the full front as distinguished from *in antis*.

(*b*) Amphi pro style, having its columns in such porticoes, and at each end only.

(*c*) Amphi stylar, having such porticoes, either at both ends or on both sides.

(*d*) Psuedo pro style, falsely or imperfectly pro-style, having the portico columns less than an intercolumniation from the front wall, or engaged in it.

(*e*) Peri stylar or peripteral, having a row of columns all around.

(*f*) Psuedo peripteral, falsely or imperfectly peripteral, having the lateral, or lateral and rear columns engaged. Dipteral, having a double row of columns all around.

(*g*) Psuedo dipteral, falsely or imperfectly dipteral, having the space, but not the columns for the inner row, or having the inner row engaged.

(*h*) Apteral, having one or both ends porticoes, but no lateral columns.

(*i*) Monopteral (of circular buildings) having a single ring of supporting columns, without a cella.

(*j*) By the number of columns across the front as di style, having two such columns; tetra style, having four such columns; penta style, having five such columns; hexa style, having six such columns; hepta style, having seven such columns; octa style, having eight such columns; enna style, having nine such columns; deca style, having ten such columns; dodeca style, having twelve such columns. (*Webster*)

COMITIUM, 81. The name is derived from "coire," to meet. It was a space between the Senate House and the Rostra in ancient Rome, where business both of a civil and a religious nature was transacted; a court where certain classes of cases were tried and criminals punished.

COMMUNE, 303. The Government established in Paris (1792–1794), by representatives, chosen by the people. The period is known as "The Reign of Terror."

CONFUCIUS, 96. A celebrated religious teacher. The religion of Confucius is the principal one believed and practiced in China.

CORBELS, 168. It is derived from a French word meaning a basket. In architecture it means an ornament in the form of a basket.

CORNICE, 104. The crowning part or member of a wall.

CORNUCOPIA, 253. The horn of plenty, an emblem of abundance. Amalthea was the mythological nurse, described as a goat, which suckled Zeus (Jupiter). The horn of Amalthea, or the horn of the goat, was given by Zeus to a nymph. Whenever the horn was blown by the nymph it had the remarkable property of being filled with whatever the nymph most wished.

CORRIDOR, 182. A gallery or passage leading to several parts of a building. It is from an Italian word meaning a runner, hence a running line of arches, columns, etc.

CUPOLA, 100. A dome, an arched roof. It is from a Latin word meaning a tub, a small burial vault.

D

DACIAN WAR, 74. Dacia was an ancient country north of the Danube. The Romans and Dacians were almost continuously at war.

DEMETER, 239. In the Grecian myths Demeter (Ceres) was the goddess who presided over the crops and agriculture.

DENKMAL, 313. A German word meaning a monument or memorial.

DIONYSIUS OF HALICARNASSUS. A Greek historian. He lived 54 B. C.

DORIC ORDER, 45. The oldest and simplest of the three orders of Greek architecture.

DUILIAN COLUMN, 81. Caius Duilius was the first Roman general to gain a naval victory over the Carthaginians. A bronze column was erected to his honor in the Forum at Rome.

E

EDFOU, 21. A village in upper Egypt, noted for being the location of a most famous Egyptian temple.

ENTABLATURE, 49. From Latin tablatum, board work flooring, "an architecturally treated wall, resting upon the capitals of the columns and supporting the pediments or roof plate."

EPHESIAN ARTEMIS, 235. An ancient divinity known as "Diana of the Ephesians." Artemis was of Persian origin, called in that country "Metra."

ERECHTHEION, 53. Erechtheus was a mythological hero of Greece. According to the myths, Erechtheus built the Temple of the Erechtheion on the Acropolis about 500 B. C.

ESQUILINE HILL, 232. One of the "Seven Hills" of Ancient Rome.

EXHEDRA, 62. A semi-circular seat, the back forming a crescent-shaped wall seat.

F

FABIUS, 81. Maximus Quintius Fabius, was one of the greatest generals of Rome.

FAN-TRACERY, 121. The decoration of a vaulted roof by the use of ribs, shaped like fans.

FINIALS, 121. A bunch of foliage that forms the extremity of a pinnacle in Gothic Architecture.

FLAMBOYANT TRACERY, 121. "Having to do with the late French Gothic Window traceries, and so arranged that the openings between the stone piers are no longer circles, either with or without cusps, and the triangles between the circles have the shape of flames" (Sturgis).

FLAVIAN AMPHITHEATRE, 87. This structure was built at Rome, by Emperors Vespasian and Titus about 80 A. D. It is commonly called the Colosseum.

FLYING BUTTRESS, 130. "A masonry structure consisting of a straight inclined bar, carried on an arch and a solid pier, against which it abuts, for taking up the thrust of a roof or of a vault."

FRIEZE, 168. A frieze in architecture is the central portion of the entablature, or it is a richly ornamented band on a building, or any wood work.

G

GABLE, 121. The triangular part of an exterior wall of a building between the top of the side wall and the slopes of the roof.

GAEA, 235. The first divinities of the Greeks were Gæa and Uranus.

GARGOYLES, 124. Projecting spouts to carry water from the roofs of buildings. Gargoyles are peculiar to all Gothic buildings and usually have weird and grotesque forms, representing demons and horrid monsters.

GENII, 141. Plural of genius — a representative type.

GENRE, 365. A style of painting showing scenes in everyday life.

GLYPTOTHEK, 150. A fine art gallery in Munich.

GRIFFIN, 141. A chimerical creature with the body of a rampant lion and the beak, claws, and wings of an eagle.

GUILD HALL, 122. A town hall where a guild, or a corporation, usually assembles.

H

HADRIAN, 78. A Roman Emperor, b. 76 A. D., d. 138 A. D.

HIEROGLYPHICS, 24. Picture writings of ancient Egyptians.

HORAE. Grecian divinities representing the seasons.

I

ILIAD, 250. A great poem written by Homer — a story of the "Siege of Troy."

ISIS-HEADED COLUMNS, 20. Columns with the figure or bust of the Egyptian Goddess Isis on them.

ISSUS, BATTLE OF, 353. Issus is an ancient seaport on Asia Minor. In 333 B. C., a great battle was fought there in which the forces of Alexander the Great defeated those of Darius, King of Persia.

INTER-COLUMNIATION, 46. "The clear space between two columns, sometimes the distance between their centers, measured at the bottom of their shafts. Certain proportions were established by Marcus Pollio Vitruvius, a Roman Architect and Enigneer, first century, B. C. They are:

(*a*) Pycno style, when the intercolumniation is one and a half diameters.

(*b*) Sy style, when it is two diameters.

(*c*) Eu style, when it is two and a quarter diameters.

(*d*) Dia style, when it is three diameters.

(*e*) Aræo style, when it is four diameters or more, and so great that a wooden architrave has to be used instead of stone.

(*f*) Aræo sy style, when the intercolumniations are alternately sy style and aræo style. These proportions rarely occur in ancient buildings, and the classification is merely theoretical. Different words derived from the Greek, are in use to denote certain common proportions." (*Webster*)

J

JAMB SHAFT, 121. "A column, free or engaged, decorating the jamb of a door opening or window opening, in Medieval Architecture." (*Webster*)

JANUS, 81. A mythological god of Rome. The month of January was named after him. In his statues Janus is represented as having two faces.

JASON, 244. A Mythological hero whose greatest adventure was the capture of the "Golden Fleece."

JUSTINIAN, 93. A celebrated law writer. He died 565 A. D.

K

KIOSK, 105. A structure of the Turkish Style of Architecture. It is an open pavilion supported by pillars.

L

LAOCOON, 246. A mythological priest of Apollo, who was inside the walls of Troy during the seige by the Greeks.

M

MAENIA COLUMN, 81. This column was erected in ancient Rome to the honor of C. Mænius, who conquered the ancient Latins and to whom the Romans gave one-third of the spoils.

MAUSOLEUM, 7. The name of a magnificent sepulchral monument, erected at Halicarnassus in Asia Minor, about 350 B. C., by Queen Artemisia to the honor of her husband, Mausolus, King of Caria. It is one of the "Seven Wonders of the World."

MEDALLION, 126. A large medal or memorial coin.

MEDUSA. 242. Medusa was the name of one of three frightful monsters, called "Gorgons" who were servants of Pluto, King of Hades.

MINOTAUR, 243. A mythological monster — half man, half bull.

MISERERE, 135. The fifty-first psalm, the most commonly used of the penitential psalms.

MOHAMMEDANISM, 96. A religion founded by Mohammed.

MOSLEMS, 311. Followers of Mohammed.

MOUNT OLYMPUS, 225. A mountain between Macedon and Thessaly. According to the Grecian myths, Mount Olympus was the sacred dwelling place of all the gods.

MULLIONS, 126. A division between the lights of windows or bays in wainscotting.

N

NAVE, 113. The middle, or body, of a church, extending from the transept to the main entrance.

NERVA. A Roman Emperor, 98 A. D.

NEO-GREEK, 175. A modern style of architecture showing the Greek spirit.

NILE, 253. A river in Egypt.

O

ORACLE, 74. The revelation or utterance supposed to issue from a divinity through a medium, usually a priest or a priestess.

OBELISK, 21. An upright four-sided pillar that tapers as it rises; the part close to the top being in the form and shape of a pyramid. Obelisks were very common in the architecture of ancient Egypt.

OSIRIS, 382. One of the great Egyptian deities — the god of the underworld and the judge of the dead.

P

PAGANS, 428. Worshippers of false gods, heathen, idolaters.

PAGODA, 7. "A tower-like storied structure, usually a temple or part of a temple, or a memorial, such as are frequent in India, China, Farther India, and Japan." (*Webster*)

PALATINE HILL, 66. One of the famous "Seven Hills of Ancient Rome." Authorities differ about the origin of the word Palatine; some claim it is from Pales, the goddess of shepherds and herdsmen.

PANTHEON, 151. The Pantheon at Rome is a temple built by Agrippa about 27 B. C. It was a place for the worship of all the gods. "It is the noblest and most perfect production of that style of architecture specifically called Roman." (*Forbes*)

PARQUETRY PATTERNS, 146. A kind of joinery or inlaid work, used especially for floors.

PENATES, 81. The gods of Roman households closely associated with the worship of Vesta, the goddess of the hearthstone.

PERGOLA, 7. In architecture a pergola is a long row of columns

(double, triple or more) with a roof for vines overhead and seats underneath. "A continuous colonnade, or arcade."

There is a fine pergola in "The Paseo," a park, ten blocks long and one block wide, in Kansas City, Mo.

PERICLES, 215. A famous Grecian sculptor.

PERISTYLE, 62. "A complete system of roof-supporting columns on all sides of a court of a building, such as the 'cella' of a temple." (*Webster*)

PHOCAS, 8. The column of Phocas, upon which there was a statue of that Emperor, stood opposite the Senate House of Ancient Rome. It was erected 608 A. D.

PILASTER, 168. "An upright architectural member, rectangular in plan, structurally a pier, but architecturally treated as a column." (*Webster*)

POLYGONAL COLUMNS, 20. Columns having many sides, especially more than four sides.

PONTINE MARSHES, 74. An extensive marshy district, 26 miles by 17 miles southeast of Rome.

PORCIA BASILICA, 81. An ancient structure in the Roman Forum where tribunes held their courts.

PORTA SANTA, 48. Holy door.

PORTICO OF TWELVE GODS, 81. This portico was so called from the fact that Fabius Xantius, a curator of monuments, placed images there of the household gods of Rome; Juno, Vesta, Minerva, Ceres, Diana, Mars, Venus, Mercurius, Jovi, Neptunus, Volcanus and Apollo. The ancient structure stood on the Via-Sacra ("Sacred Way") leading into the Roman Forum.

PROPYLON, 19. The word means "before a gate." "A Propylon is an outer monumental gateway standing before the pylon or main entrance gateway to a temple." (*Webster*)

Q

QUADRIGA, 19. A car or chariot drawn by four horses abreast.

R

RESPALDOS, 133. Decorated leanings on the back of seats in Spanish Cathedrals (Spanish Architecture).

RHEA, 235. In the Grecian Myths, Rhea was the wife of Cronus. the mother of Zeus (Jupiter). and

RIBBED VAULTS, 130. "A construction in which arched ribs are built from point to point over a space to be vaulted." (*Sturgis.*)

ROSTRA AD PALMAN, 81. The orators' platform (curved in front) which stood in the Roman Forum.

S

SARACENS, 99. Arabs from the eastern part of Arabia. It is claimed that "Saracen" is an Arabian word meaning "a robber."

SHINTOISTS, 96. Shinto is a Chinese word meaning "good way." Shintoists are followers of the religion of Shintoism. This religion was introduced in Japan from China 552 A. D. The principal divinity of Shintoism is Amaterasu, from whom every Mikado has claimed to be descended.

SINAI, 143. Mountains on the coast of the Red Sea in Arabia.

"SKY-SCRAPERS," 176. Buildings carried up to very great height. They are always of the steel structure type, that is, a high steel skeleton framework, around which stone, or some other substance, is set in mortar and clamped in certain spaces by rivets.

STRAINS, 120. In architecture a strain means a change in any part of the work, or a result of heavy stress.

STUCCO, 140. A fine plaster made of gypsum and glue water, used for relief ornament.

STYLO-BATE, 49. "A continuous flat coping, or pavement, on which a row of columns is supported." (*Webster*)

T

TABULARIUM, 81. The ancient public record building at Rome, built 78 B. C.

TEMPLE OF JUPITER, 61. At Olympia.

THRUST, 120. "A horizontal or diagonal outward pressure, as of an arch against an abutment, or of a rafter against a supporting wall. (*Webster*)

TITUS, 72. Titus Flavius Sabinus Vespasianus, and Emperor of Rome. History gives a record of two great achievements gained by Titus: The capture of Jerusalem, 70 A. D., and the building of the Colosseum.

TOGA, 402. The word is from the Latin tegere "to cover." A loose outer garment worn by the men of ancient Rome.

TRANSEPT, 129. "The transversal part of a cruciform church, which crosses at right angles to the greatest length, and between the nave and the apse of choir." (*Webster*).

TRANSVERSAL ARCHES, 200. Arches with entrances running both ways, crossing in the middle. From trans (across); vertere (to turn).

TRASCORO, 133. Ornamented work in a space in a church at the back of the choir (Spanish Architecture).

TREFOIL, 126. An architectural ornament of three cusps, in a circle, resembling a three-leafed clover.

TYMPANUM, 150. "The space within an arch and above a lintel spanning the opening below the arch." (*Webster.*)

V

VATICAN, 221. The name is derived from the Celtic word "Vates" meaning prophets, priests. In ancient times there was a mythological god, Vaticanus, from whom the "vates," or priests, were supposed to get answers to all questions relating to things under the control of the immortal gods.

VISITATION, THE, 257. (Ecclesiastical) "Festival in honor of the visit of the Virgin Mary to Elizabeth, mother of John the Baptist commemorated on the second of July." (*Webster.*)

W

WALHALLA AT RATISBONN, 150. The word Walhalla (or Valhalla) means "Hall of the slain." It is a hall or temple in Ratisbon, Bavaria, containing memorials of German heroes.

WHEEL TRACERY, 121. It means a special form of tracery in which decorated patterns, formed by wheels and curves, prevail.

Z

ZEUS (Jupiter), 221. "Zeus, the great presiding deity of the Universe, the ruler of heaven and earth, was regarded by the Greeks, first as the god of all aerial phenomena; secondly, as the personification of the laws of nature; thirdly, as lord of state life; and fourthly, as father of gods, and of men" (*Berens' Hand-book of Mythology*).

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